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The Antiquaries Journal

Being the Journal of the Society of Antiquaries of London

VOLUME XXXIX

JANUARY-APRIL 1959

NUMBERS 1, 2

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Published by

THE OXFORD UNIVERSITY PRESS

LONDON GLASGOW NEW YORK TORONTO MELBOURNE WELLINGTON

BOMBAY CALCUTTA MADRAS KARACHI KUALA LUMPUR

CAPE TOWN IBADAN NAIROBI ACCRA

Annual Subscription, 40s. post free; 20s. per double part

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All communications on Editorial matters and books for review should be addressed to the Assistant Secretary, Society of Antiquaries, Burlington House, London, W. 1

The Antiquaries Journal

Being the Journal of
The Society of Antiquaries of London

VOLUME XXXIX

V. 39-40. 1959-1960

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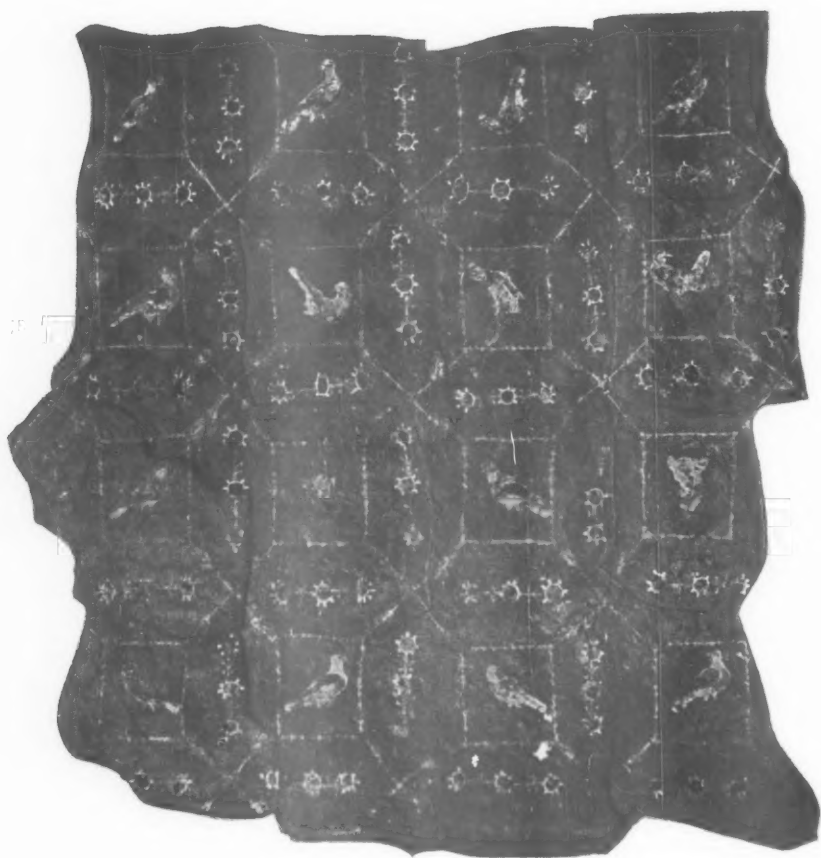
CAPE TOWN IBADAN NAIROBI ACCRA

1959

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Second-century painted ceiling from corridor in Building XXI, 2. See Appendix, p. 17.

Scale: $c. \frac{1}{15}$

The Antiquaries Journal

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EXCAVATIONS AT VERULAMIUM 1958

FOURTH INTERIM REPORT

By S. S. FRERE, F.S.A.

EXCAVATIONS were carried out by the Verulamium Excavation Committee, on behalf of the Research Committee of this Society, for a fourth season lasting $7\frac{1}{2}$ weeks in July and August 1958. Work was confined to two areas. The plan of the extra-mural building (Site S) north-east of Verulamium on the opposite side of the river, beside the A5 road, was recovered in so far as affected by the new road which is soon to cover it; the remainder of the work was devoted towards completing the plans of, and obtaining the fullest information about, sites in Insulae XIV and XXVIII, which had been already partly explored in 1957. Those parts are already sealed under the new road; if the Committee fails to explore the remainder of such buildings, in so far as they extend outside the area of the new road, before pegs and landmarks disappear it will never be possible to complete the plans accurately. In view of the importance of most of the buildings which need further treatment in this way, it is to be hoped that support will not fail before the work is done.

Nineteen paid labourers were employed and this year we had the advantage of the presence of a party of nine American undergraduates, eight of whom stayed the entire period. Thanks are due to the School Managers of St. Michaels, the St. Albans City Council, and the American Air Force, all of whom contributed to make possible accommodation for this party. In all over a hundred persons were present daily on the site during August. Especial thanks are therefore due to the site supervisors, Miss M. G. Wilson, T. Harman, J. C. McCulloch, and Miss Anne Birchall, who were present during the whole dig, and Mrs. A. Ravetz and Dr. W. Cummins, who assisted for a shorter period. Mr. M. B. Cookson once again saw to photography (both plain, coloured, and motion); Mrs. J. Birmingham and Mrs. H. J. M. Petty with their many helpers saw to the treatment and disposal of the finds; Mr. G. H. Allard and Mrs. A. B. Frere worked very hard at the sale-of-literature tent, and Lt.-Col. A. MacMunn as guide; Mr. H. J. M. Petty saw to the accounts and the administration. To these and many other helpers, especially Mrs. C. M. Bennett and Miss A. Low for their work on the camp commissariat, grateful thanks are expressed. In all £2,172 was spent, £715 of which was contributed by the general public on the site in donations and purchases.

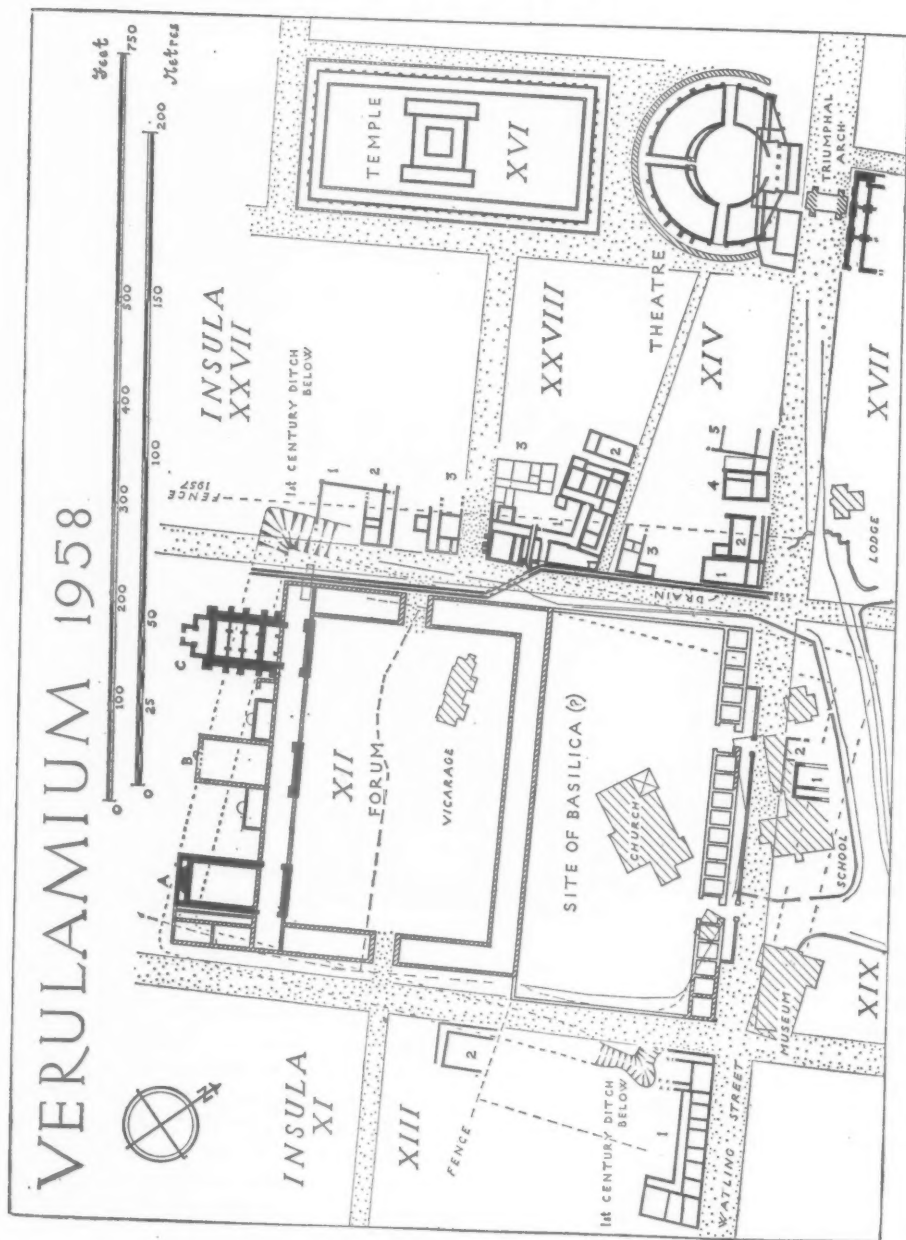


FIG. 1. Site plan.

INSULA XIV

The work in Insula XIV was an extension north-west along Watling Street of the work done in 1957 on Buildings 1 and 2.¹ Once again three main periods were encountered. Immediately below the disturbed soil of the allotments were traces of walls of flint and mortar and of tessellated and mosaic floors. Below these was a thick layer of burnt daub produced by a fire which swept this corner of the city about A.D. 200,² utterly destroying the timber-framed buildings which occupied the insula. These timber-framed buildings had had a long history, being first erected after the fire of A.D. 60 and subsequently undergoing modifications and extensions throughout the late first and second centuries. Below them lay houses of the earliest period, those destroyed by Queen Boudicca in A.D. 60.³ It will be convenient to describe these buildings in detail in their historical order.

Period I (fig. 2)

The Claudian buildings are now known over a stretch of about 166 ft., though it is a pity that time in 1957 did not allow more complete exploration of those levels underneath the present road. There seems to have been a comparatively large building on the street corner, but the buildings exposed this year to its north-west, though on a smaller scale, were clearly part of a single conception of town planning. The plan suggests that they fall into a series of shops with front rooms each about 16 ft. wide by 20 ft. deep, behind which lie single or divided living-rooms 16 by 12 ft., and that one partition has been destroyed by a robbing trench of Period III.

The most interesting feature of the planning is the front portico or gallery which extends without subdivision all the way along the face of the shops: it was a feature repeated here after the fire of 60 and it suggests a simple form of colonnaded street, the Watling Street being flanked by wooden columns with or without conjoining lengths of dwarf-wall. Beneath the penthouse carried by these uprights we have a covered walk and bazaar; the difference noted in Period II between the accumulated floors of the rooms behind and the gritty trampled earth in this front room was already established in Period I. These differences were due to heavy pedestrian traffic in the room in question (10).

The whole arrangement suggests planning on a scale more comprehensive than the individual shops, and that these shops accordingly were rented from a single landowner. There is nothing to suggest public ownership: indeed the change at the corner suggests the reverse. We may accordingly recognize here one of the new ways in which the wealthier classes among the Catuvellauni invested their money in the years following the conquest of A.D. 43. A new block of shops on the frontage of Watling Street must have been a profitable speculation, were it not for Boudicca.

There were distinct changes in floor-level from room to room, especially towards

¹ *Antiq. Journ.* xxxviii, 4 *et seq.*

² Since this report was written an examination by Mr. B. R. Hartley, F.S.A., of all the samian from the burnt deposits has made it likely that the fire was in fact rather earlier than this, the collection being Antonine I in character. A consideration of

all the evidence will probably define the date of the fire as falling between A.D. 160 and 180, perhaps even between A.D. 160 and 170.

³ This date seems preferable to 61: see Syme, *Tacitus*, p. 765.

the south; in some cases the sleeper-beam merely revetted the higher floor behind and lay on the surface of the lower floor in front: it was not set in a trench cut into this floor. Some of these higher floors had very little trace of burnt daub over them, and the impression remained that much of it had been carted away, possibly in the preparation for rebuilding, possibly in the search for valuables or for the dead. Certainly finds were not numerous and the whole thing contrasted with the mass of burnt daub and ash covering the houses consumed *c.* A.D. 160.

Room 8 contained a shallow pit up against the wall: it was full of burnt daub, but at its base, and especially along the sides, lay pieces of coke-like organic material which had melted as it carbonized. The material had given off a viscous material as it burnt and is now devoid of any uncarbonized matter. It is not bread, but perhaps was wool or hair: identification is impossible.¹

To the rear of the main range of buildings the absence of any burnt daub made the recognition of the Boudiccan horizon very difficult. Here were faint traces of walls of hurdle-work; it is possible that these hurdles were joisted to a sleeper-beam below, but the point was not finally determined. In places two adjacent parallel lines of hurdle survived, recalling the type of construction identified at Corbridge;² where only one was present, it is probable that it was plastered with clay on both faces (see p. 8 below). These walls had apparently not been burnt, which suggests that the wind may have been from the west, and that the fire was started from the street.

At the north end of the site were curious traces of metal working. These consisted of patches of dark soil rectangular in plan, of the order 24 by 14 in. to 22 by 20 in., and quite shallow, only 2–3 in. thick (pl. 11*b*). There were three in room 19 and two just west of room 21 in an area provisionally called room 24. The dark soil was finely stratified, and contained masses of powdered bronze and tiny fragments of this metal. The emplacements generally seemed to be on the floor rather than in it, and possibly the surviving filling had been contained in shallow wooden trays, though no physical trace of them was noticed. Occasionally there were varying arrangements of post-holes adjoining, and in two cases hearths also. The matter is still under investigation; at present it may be tentatively suggested that bronze engraving or grinding was being carried on, and that the debris somehow became deposited in these shallow sumps. The latter were so shallow that only a little drip of water seems possible: perhaps, too, the residue was collected beneath in this way for eventual re-smelting.

Period II (fig. 3)

When the time came to rebuild after the fire, interesting evidence of continuity is provided by the reappearance of these emplacements in the building above, suggesting that the workers in question were able to re-establish themselves on the same site. This has interesting implications with regard to the severity of the sack in A.D. 60 on both life and property.

¹ I am indebted to Dr. Ian Cornwall for examining samples of this material.

² *Arch. Ael.* ⁴ xxx, 242.

INSULA XIV

TIMBER-FRAMED BUILDINGS.. DESTROYED A.D. 60.. PERIOD I

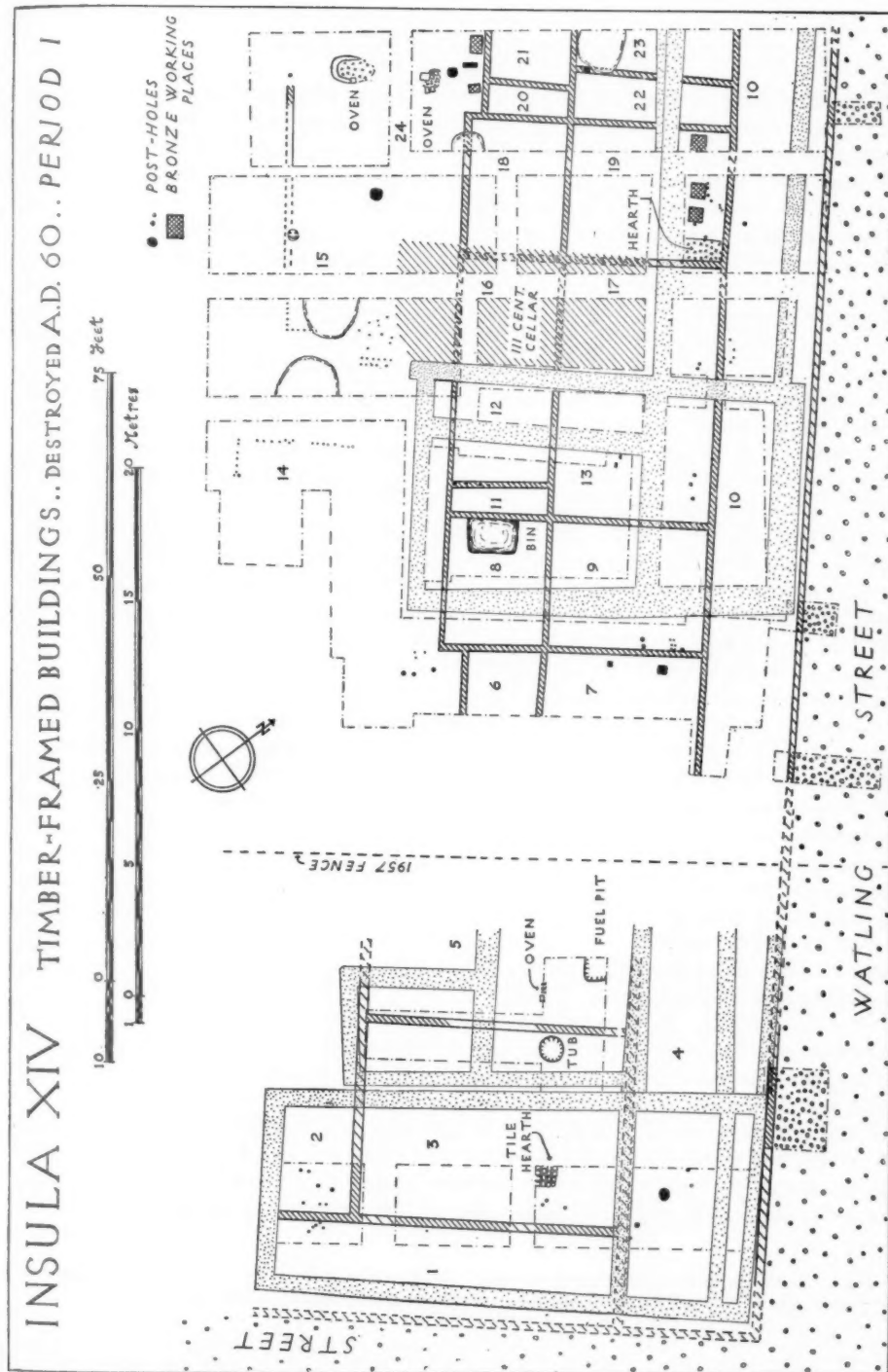


FIG. 2. Claudian-Neronian wooden building.

The rebuilding, indeed, followed very similar plans; once again we have the open portico along Watling Street with metal working and shops behind it. A greater complexity, indeed, is present from the start, and later intensified; the buildings were extended farther to the rear. Whether or not the Period I buildings were laid out or planned by military engineers and even from army stock-piles of timber (as the regularity of the plan suggests, and is quite likely at such an early date when the need to develop the towns was pressing, and civilian experience in Britain of architecture was young and limited), it is clear that the Period II rebuild is a purely civilian design. The buildings are once more in wood and this time had a long life, eventually meeting destruction in a conflagration during the Antonine period. This marks the end of Period II; it was, however, possible to identify four main phases¹ within this period, since sleeper-beams laid in damp soil would be liable to rapid decay: replacement and alteration was correspondingly undertaken frequently and with ease. Last year some difficulty was experienced, when digging in 10-ft. squares, to link up the various phases from trench to trench, since the stratification is thin and varied (pl. IIIA). This year, therefore, much wider, larger areas were opened up. This involved a slight sacrifice of sections, and in practice three parallel 12-ft. trenches were cut in the north part (Site B), but in the south part (Site A) sections were left along the faces of the robbing trenches of the Period III stone buildings, these robber trenches themselves being employed as baulks since they had penetrated to the subsoil; the whole area between them was taken out. Even so the complete correlation of levels was by no means easy.

The sequence of floors from A.D. 60 to 160 yielded this year a very rich harvest of stratified finds, including some fine groups of decorated samian and small objects. Buried in a clay floor up against a sleeper-beam was a hoard² of 50 denarii including 21 Republican and going down to the last years of Trajan. The back rooms contained hearths and ovens and the different colours, red (hearths), yellow (clay floors), and black (ash and occupation), were a notable object-lesson in stratigraphy (pl. III and VC). There was a clear contrast between these superimposed floors in the rear and the accumulated dark trampled earth which had built up in the portico (pl. IIIA, left). It was obvious that this had been heavily frequented by pedestrian traffic, and had not required more than very periodic reflooring, owing to the trodden dirt left by this traffic. The trodden dirt contained much iron-slag, suggesting a smithy not far off. The latest phase of this portico produced a number of post-holes which imply counters built out in front of the shops, and, in this phase only, a change in floors of the portico suggested a dividing wall (between 18 and 25) though it was not actually traced. The final phase before the fire was in places well preserved, and provided valuable evidence for constructional methods. This was particularly so in room 23. The north-west wall of this room was external, 1 ft. thick, the north-east and south-east walls being internal partitions and only 6 in. thick above a rather wider sleeper-beam. All survived to a height of 12-18 in. The wall-plaster was plain and undecorated; on its removal chevron patterns of

¹ Fig. 3 shows the plan of the latest of these intermediate phase.

² To be published in *Num. Chron.* by Dr. C. M. Kraay.

INSULA XIV TIMBER-FRAMED BUILDINGS: PERIOD II PHASE D

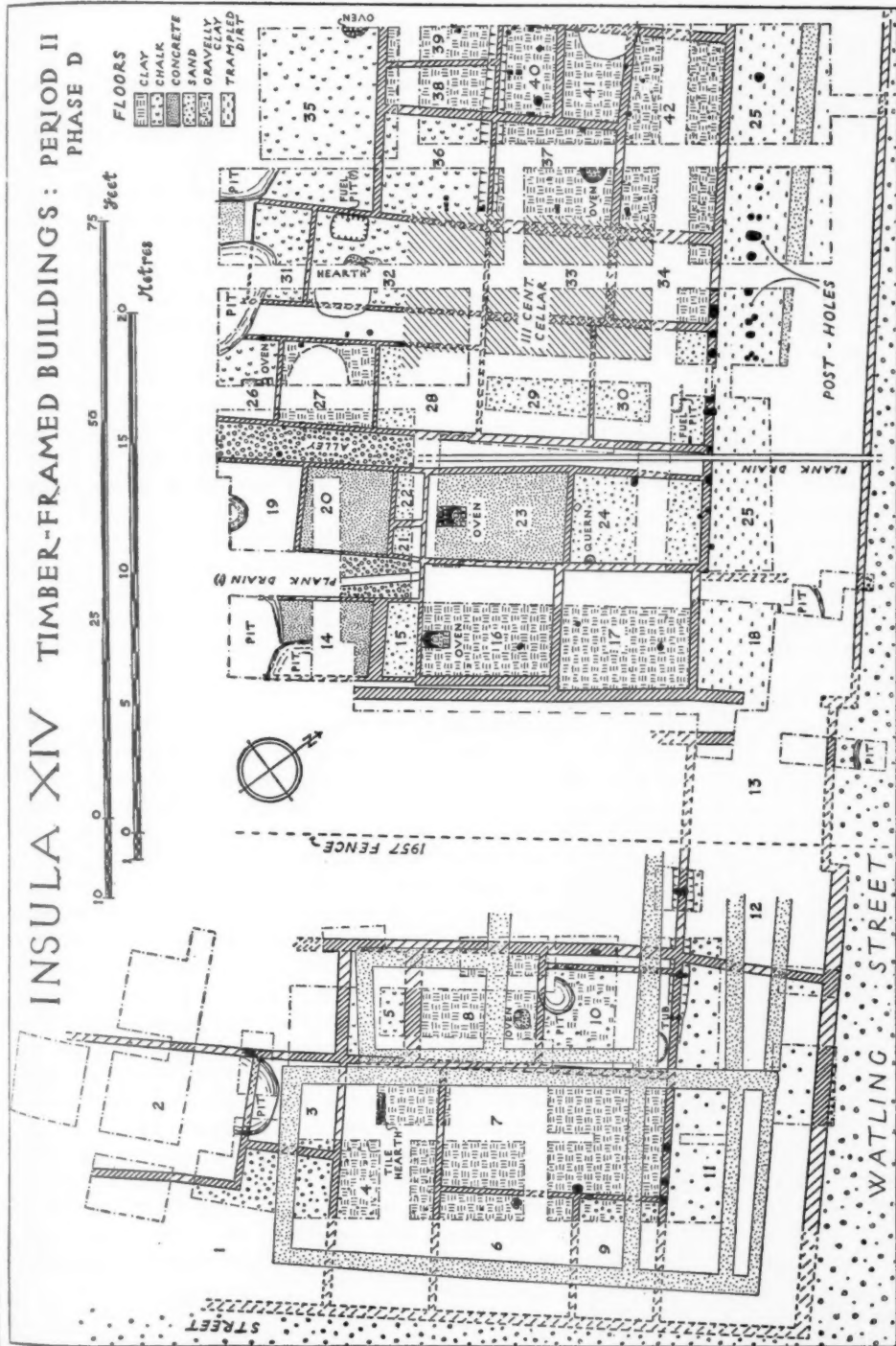


FIG. 3. Latest phase of Period II, destroyed in the Antonine fire.

trowel-impressions were observed for its keying (pl. 11*a*). Further sectioning disclosed the timber frames. In the external wall these consisted of uprights 6 by 3 in. rising from a sleeper-beam below and standing at 14-in. intervals (pl. 11*b*). There were slight traces of smaller vertical slats between them in places. The internal partitions, on the other hand, were built round hurdles of withies, the north-east wall preserving mainly horizontal impressions, the south-east mainly vertical (pl. 11*c* and *d*). On to this hurdle-work clay had been pressed.

This room and that adjacent to the south (16) (pl. *vb*) contained ovens and the building may therefore have been a bakery. Room 23 produced a fine iron shovel with a handle of twisted iron 25 in. long ending in a ring. A large group of pottery was recovered here, all apparently of fairly late Antonine date. In a pit behind was found a hoard of 108 roundels of lead resembling coins but quite blank. In one or two places the wall-structure was difficult to interpret, since the beam lay at the base of a fairly wide trench (*c.* 32 in.) itself full of burnt daub, and therefore accessible at the time of the fire, unless, indeed, at these points salvage work had taken place immediately afterwards. But, as many sleeper-beams were completely charred, this would seem unprofitable.

There was a gap 2 ft. 6 in. to 3 ft. wide between the external wall, already described, of rooms 23 and 24 and that of the next building to the north-west (28-30). This was left as an eaves-drip and was occupied by a timber drain, itself full of burnt daub, which ran out beneath the portico to the street. Farther to the rear this, and a similar gap farther south, were metalled with gravel, providing paths to the back doors.

Period III (fig. 4)

It became clear this season that after the fire a considerable period had elapsed before rebuilding. The upper part of the daub was disturbed and produced late-third-century coins; the fire, on the other hand, can hardly be placed much later than A.D. 160-180, on the evidence of things sealed by its debris. This result was hinted last year. Eventually, however, perhaps *c.* A.D. 300, the site was redeveloped, this time in masonry as a row of much larger shops. The corner building, XIV, 1, and part of the next, XIV, 2, were uncovered in 1957. This year the north-west side of XIV, 2 was found, robbed as usual to its chalk footings. Beyond this was a gap in which stood two groups of flints, bases for posts supporting a gate for yard or goods-entry. The next group of buildings, XIV, 4 and 5, were semi-detached, as XIV, 1 and 2 had been. Building XIV, 4 is clearly once again a shop. Building XIV, 5 is as yet incompletely known and its back parts were very much disturbed. All that could be planned in either building with the exception of short stretches of walling still surviving in the front of XIV, 5 were robbing trenches, which do not give us the true dimensions of the walls. Where the walls of XIV, 5 survived, they stood on chalk footings, like those of building XIV, 2; but in XIV, 4 the robbing trenches descended to natural soil, suggesting former masonry footings like those of XIV, 1. The back of XIV, 5 was subdivided by a slightly oblique U-shaped trench in which post-holes appeared (pl. *vc*, where these post-holes are seen penetrating a floor of Period II), but though this suggested an internal partition of wood, no back wall to the house revealed itself. The extreme west end, indeed,

INSULA XIV BUILDINGS 1, 2, 4, & 5 : MASONRY SHOPS... III-IV CENT. (PERIOD III)

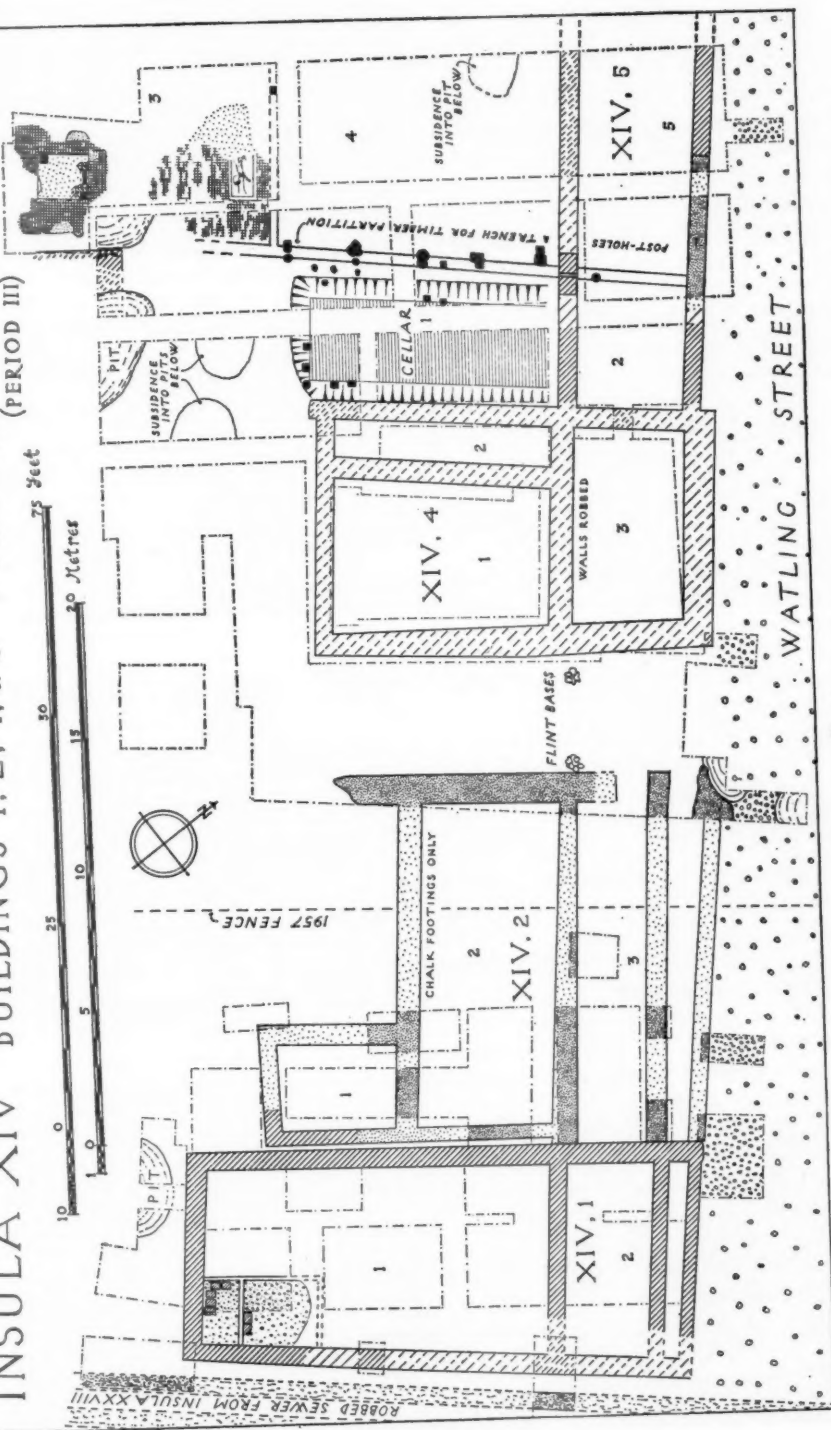


FIG. 4.

was occupied by a mosaic with a fragment of wall-corner to its south; but these could possibly belong to the rear of a house facing the street to the west rather than to building XIV, 5. The mosaic just mentioned stood within a border of red tesserae, but the pattern had largely disappeared. The mosaic tesserae were small and very thin, and appeared to have become loose and to have been swept up in Roman times. The pattern, with its angle buds, short strands of guilloche at the centre of each side, and traces of perspective boxes, is clearly that figured in *Verulamium*,¹ pls. XL and XLVIA, and there dated to the middle of the second century. The present example is to be dated c. A.D. 300, but it is much less carefully executed: the angle bud does not stand diagonally to the pattern, but lies across the corner.

A second mosaic was found a few feet farther north and this more certainly belongs to XIV, 5. A few traces of surrounding red tesserae survived, but the mosaic itself lay over an early pit or well, one of several discovered (but not yet completely excavated), the filling of which had subsided bodily several feet by compression. The mosaic above had accordingly assumed the form of a hip-bath. Its surface, too, had been badly discoloured by fire, but parts of a distinctive pattern can be identified. A beast, perhaps a stag, runs to the right: behind it is the mane of a lion whose front paws are slashing at its rump. This mosaic, parts of which were clinging almost vertically to the sides of the subsidence, was raised with some difficulty and is being restored in the Museum. There do not appear to be Romano-British parallels to this form of pattern, though more elaborate versions are common in Italy and Africa. The date is, once again, late third century or later.

One of the most interesting features of XIV, 5 was its cellar, adjacent to XIV, 4. This had cut down through, and destroyed, all traces of the earlier timber buildings on its site, and was itself filled with clay and rubble during the fourth century. The cellar was timber-lined, and was not dependent on the masonry wall along its south side. Only a small sector was excavated this year, but it was clear that, once the hole had been dug, large wooden posts almost 1 ft. square and c. 2 ft. apart had been erected round its edges and earth packed in behind them. Intermediate planking would of course be required. The entrance appeared to be by wooden steps at the west end. On the floor of the cellar lay a medley of fine iron objects, somewhat corroded. In the small area cleared, an iron wedge, a carpenter's plane, a large linchpin, a nave-hoop, and a number of iron straps have been identified. I am much indebted to Mr. H. W. M. Hodges for the care he has given these objects at the laboratory of the Institute of Archaeology.

INSULA XXVIII

Building I (fig. 5)

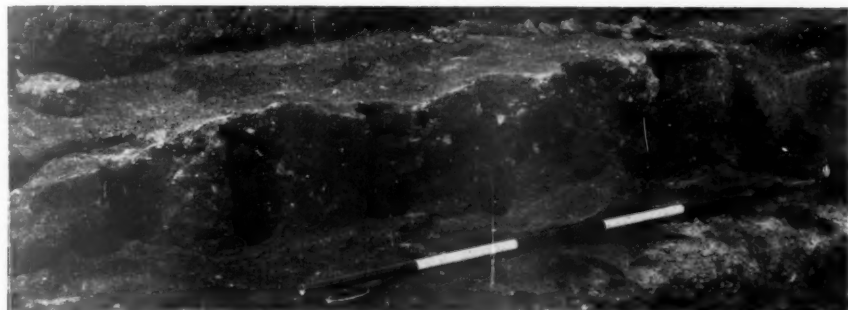
In 1957 the south-east part of a building with a frontage of 112 ft. and occupying the whole side of the insula was unearthed. It contained an underground corridor and a substantial public lavatory, and was tentatively identified with the Public Baths. This identification can no longer stand.

The building does not occupy the whole insula to the north-west as had been

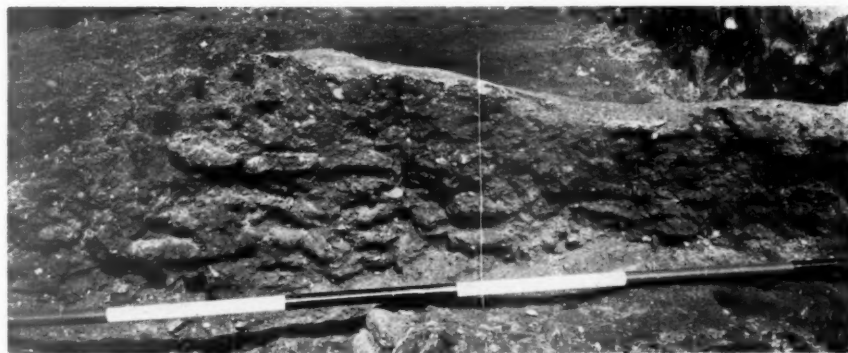
¹ R. E. M. and T. V. Wheeler, *Verulamium, a Belgic and Two Roman Cities*.



a. Keying for wall-plaster: partition between Rooms 23 and 24



b. The main frame of external wall, Room 23



c. Hurdle-frame of partition between Rooms 23 and 24

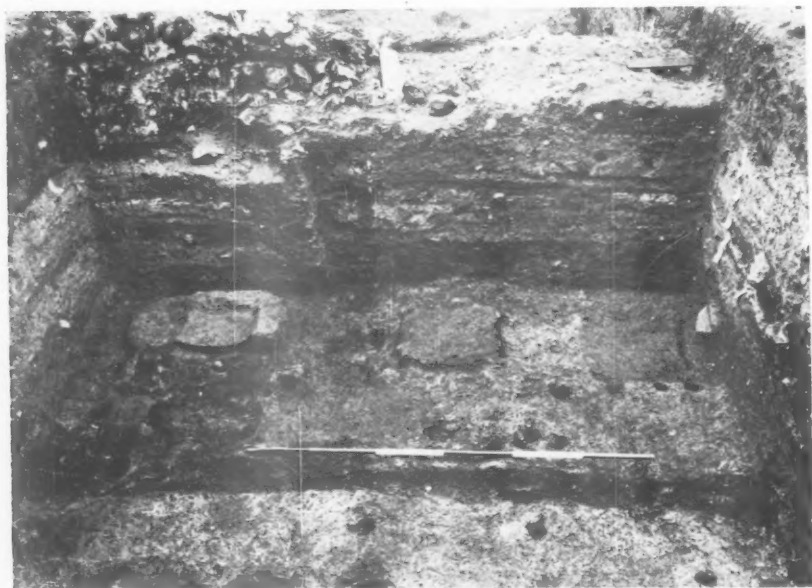


d. Hurdle-frame of partition between Rooms 23 and 16

The dissection of timber-framed walls: Insula XIV Period II D, building destroyed by Antonine fire



a. Insula XIV. The Boudiccan building exposed, and stratification of Period II. Walls of Period III seen left and right in middle distance



b. Two bronze-working places in Boudiccan building (Room 19) and one (left) belonging to Period II rebuild: in foreground burnt sleeper beam of Period I

expected; it is adjoined on this side by a small building, XXVIII, 2. There were clear indications at its western corner that XXVIII, 1 had never been completed, for the foundation of its outside west wall ended off abruptly at a point marked by the impression in its face of a wooden peg, thus leaving the building L-shaped instead of quadrangular. There are evident oddities in the plan. The area inside the L was gravelled over for a courtyard, burying in the process the burnt remains of the timber-framed building XXVIII, 3. Once again the floor-levels inside the rooms had scarcely survived owing to the amount of make-up beneath them: this raising of the floor-levels almost 30 in. above foundation-level must have been due to the desire for adequate head-room in the underground chamber. Yet slight traces of red tessellation did survive in room 19. This room and its neighbour 18 were partly occupied (where not disturbed) by a union-jack arrangement of flues radiating from a central box, the flues of room 18 being of *imbrex* tiles put together to form a pipe, while room 19 employed box-flue tiles. For some time this arrangement proved mystifying, but the discovery of traces of the lower floor of a hypocaust in room 22, and the agreement of the levels, made it clear that the surplus heat from this hypocaust had been drawn through first room 19 and then room 18, a system which cannot have resulted in much warmth but would have been adequate perhaps for living- rather than bath-rooms.

The size and arrangement of these rooms make it clear that we are faced with a large private house, whose main living-quarters, remote from the streets,¹ were approached by two corridors, both entered from the west, the one (room 2) continuing above the underground feature, the other (15) issuing from the courtyard. Both these entrances were provided with porters' lodges, that of the courtyard entrance, room 13, being secondary. Furthermore, the main domestic block thus defined probably was of two stories, at least in part, this being a reasonable explanation of the thickening of some of the walls from 2 ft. to 3 ft. Room 17, 5 ft. 6 in. wide, may have contained the stair.

But what of the large and substantial lumps of concrete containing box-flue tiles found in 1957 (and again in 1958), which at the time suggested the lavish jacketing of the walls of a public *caldarium*? These are probably down-pipes for conducting rain-water from a flat roof, if indeed they are not for water-supply pipes, such as would be required, for instance, in room 7.

The underground corridor was discovered last year to be approached down a ramp from the main street to the south-east. To the left of this ramp was a cul-de-sac 7 ft. by 7 ft.; to the right it ran north-east for 22 ft. before turning left. The right-hand wall contained semicircular niches with half-domes, the left a series of sockets for squared timbers of the order of 2 in. by 4 in. This arrangement continued round the corner save that the niches in the north wall were now rectangular. Most had been entirely robbed: neither of the two observed had survived to its top. The brackets on the opposite wall were suitable for shelving or cupboards; but as the chamber itself is only 8 ft. wide (though 42 ft. long) it may be thought that

¹ The street dividing Insulae XIV and XXVIII is only 10 ft. wide and was contemporary with building XXVIII, 1—i.e. it was little more than

an alley, though leading to the south entrance to the theatre (fig. 1).

projections of this sort would unduly constrict the space, and that they more probably carried a framework of wood to support tapestry.

The chamber ended in a substantial apse (pl. ivb) 6 ft. 3 in. in diameter and once about 6 ft. 6 in. high, set 2 ft. 3 in. above the floor. The cheeks of the apse were constructed in tile, and there was a tile offset each side at the level of the base of the apse projecting $1\frac{1}{2}$ in. from the wall below; on its upper surface it came back 2 in. and then 1 in. (with one step) to the line of the tile cheek. It can be deduced that this tile offset was designed to clasp an embellishment of the wall-face, either marble veneer or wall-plaster, and perhaps itself to form the core of a stucco moulding; but no trace of any such thing survived, and it is certain that they were never installed. The walls were well pointed (pl. ivb) but there was no trace whatever of wall-plaster on them, or of any method of affixing marble; nor was there any trace of the debris or removal of any such wall-facing, though this would have revealed itself in the thick layer of occupation which had accumulated right up to the walls. We may conclude that the place was designed for a shrine: no other explanation will suit the apse¹ or the evident preparations for magnificent finish: but also that this design was never brought to fruition: the owner died or the cult was suppressed, and work was halted. We have no clue, save the building itself, to the nature of the cult, but the plan at least makes it clear that it was a secret cult, perhaps dark-loving and certainly esoteric, but with converts among the wealthy.

This evidence of incompleteness in the shrine was supplemented by similar evidence at the western edge of the building, where the external wall had been left unfinished. While, therefore, it is clear that the building was the residence of a wealthy man, the plans for one reason or another were never completed; but enough had been constructed to satisfy immediate needs. The house no doubt, and certainly the underground chamber, continued in occupation till late in the fourth century. Evidence was lacking in the upper levels save that the south corner required subsequent buttressing: but both arms of the underground room produced fourth-century occupation, the coins going down to Valentinian.

The building had been constructed after the late-second-century fire and was clearly the work of a man of wealth and position, the site being both large and central. The south-eastern range of rooms (1 and 6) were probably shops, the rents of which, added to the sums produced by the public lavatory,² will have gone to swell his revenue.

Very little survived of building below this house except a sleeper-beam in room 17 and a concrete floor in room 16, which itself sealed a deep pit or unfinished well. This was almost 12 ft. deep and had been filled with clean material. The bottom was irregular and seemingly abandoned.

¹ Suitable for a cult-statue almost life-size.

² Room 3 will have been the attendant's office. Professor Richmond reminds me of the passage in Suetonius's *Life of Vespasian* (23, 3; cf. Dio. lxvi, 14, and Juvenal, iii, 38) recording the imposition of a tax on this form of enterprise. The inference that there were profits to be made can be drawn, more especially in the Rome case, since it seems that the

urine collected was sold to the fullers for cleaning woollens and to the tanners, which does not seem to have happened in the Verulamium case, or at least there is no evidence for it; nevertheless it would not occur to anyone to add such an establishment to his town house unless the profit motive was there. Philanthropy in this case is not enough.

INSULA XXVIII BUILDINGS 1-3

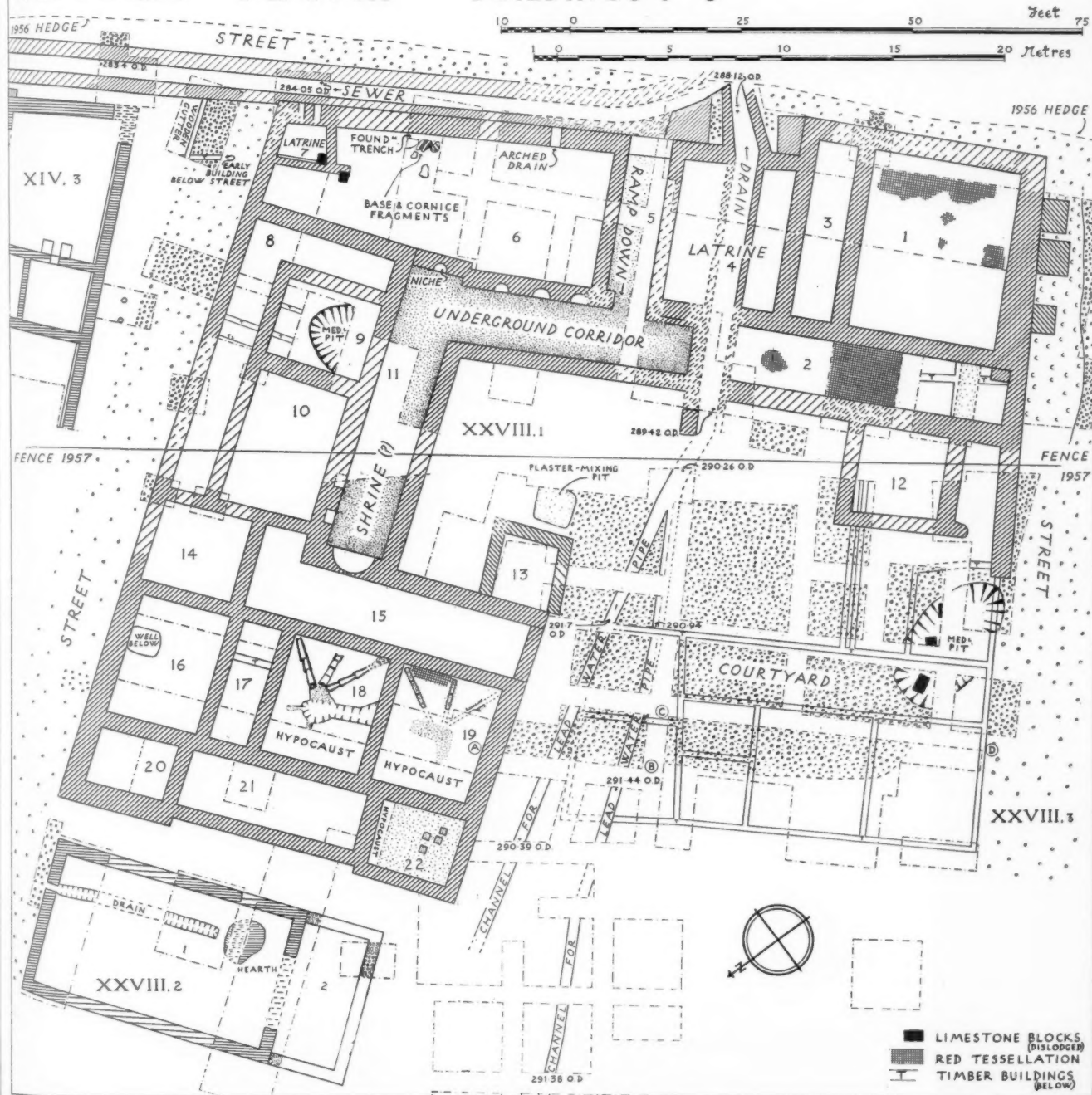


FIG. 5.

Building XXVIII, 3 (fig. 6)

However, west of the house and sealed by its gravel court was a timber-framed building, XXVIII, 3, which had perished by fire towards the end of the second century. It was an L-shaped building facing the street; the southern end had been disturbed by the footings of building XXVIII, 1. Room 9 contained a fine mosaic in perfect condition except at the west corner, where a square area was patched with clay. The rest of the floor was in such good condition, and the time limit possible before the destruction so short, as to raise the possibility that this regular-shaped scar was the intentional emplacement of, for example, an altar.

The pattern was geometric (pl. *iva*) with a central panel of two dolphins disporting themselves round a fountain playing in two jets from a *cantharus*. Portions of a similar mosaic were recovered by Wheeler in building IV, 10, and there dated mid or late second century.¹ This doubtless represents work by the same mosaicist from the same pattern-book.

The mosaic panel in room 9 measured almost 8 ft. square and it was decided to remove it to the Museum. By the good offices of Imperial Chemical Industries Ltd., the same plastic medium was employed as for last year's mosaic.² Owing to extremely wet and humid conditions difficulty was experienced in rendering the floor sufficiently dry: but in the end the mosaic was rolled up like a carpet and carried to the Museum, this being the only way of getting it through the doors short of dismemberment. It has now been remounted.

A good deal of fallen wall-plaster was recovered; in particular the south-west wall of room 3 had fallen over north-eastwards almost intact. The upper surface, which had been the north-east wall of room 2, consisted of plain white wall-plaster splashed with red. This plaster surface, lying face up, was seen to undulate. The plaster was stripped off, revealing the herring-bone trowel-incisions for its keying. Below this the cause of the undulations could be seen to lie in the decay of the main members of the timber frame, which had consisted of 4 in. by 2 in. timbers set vertically (and now lying horizontally) at 1-ft. intervals. The frame in fact closely corresponded with that already described on p. 8 above. The lower plaster face, the south-west wall of room 3 itself, now lying face down, was lifted and found to be painted in an interesting scheme of decoration. At intervals of about 4 ft. along the wall were painted columns c. 3 ft. 6 in. high with lotus-leaf capitals. Between two columns was a large panel of rather weird reddish-brown marbling, and below the level of the bases of the columns was a further, rather less tall, frieze, of marbled panels.

North-east of room 3 were two parallel slots full of burnt daub. It is possible that the outer one was a courtyard drain. Room 4 may have been subdivided by a partition near the street. At this point the floors were disturbed by the base of a medieval pit: the only evidence for the partition was provided by two scars in the floor of the building below.

¹ *Op. cit.*, pl. XLVII and p. 147.

xxxviii, 12-13, and more fully in *Antiquity*, xxxii

² The method was described in *Antiq. Journ.* (1958), 116-19.

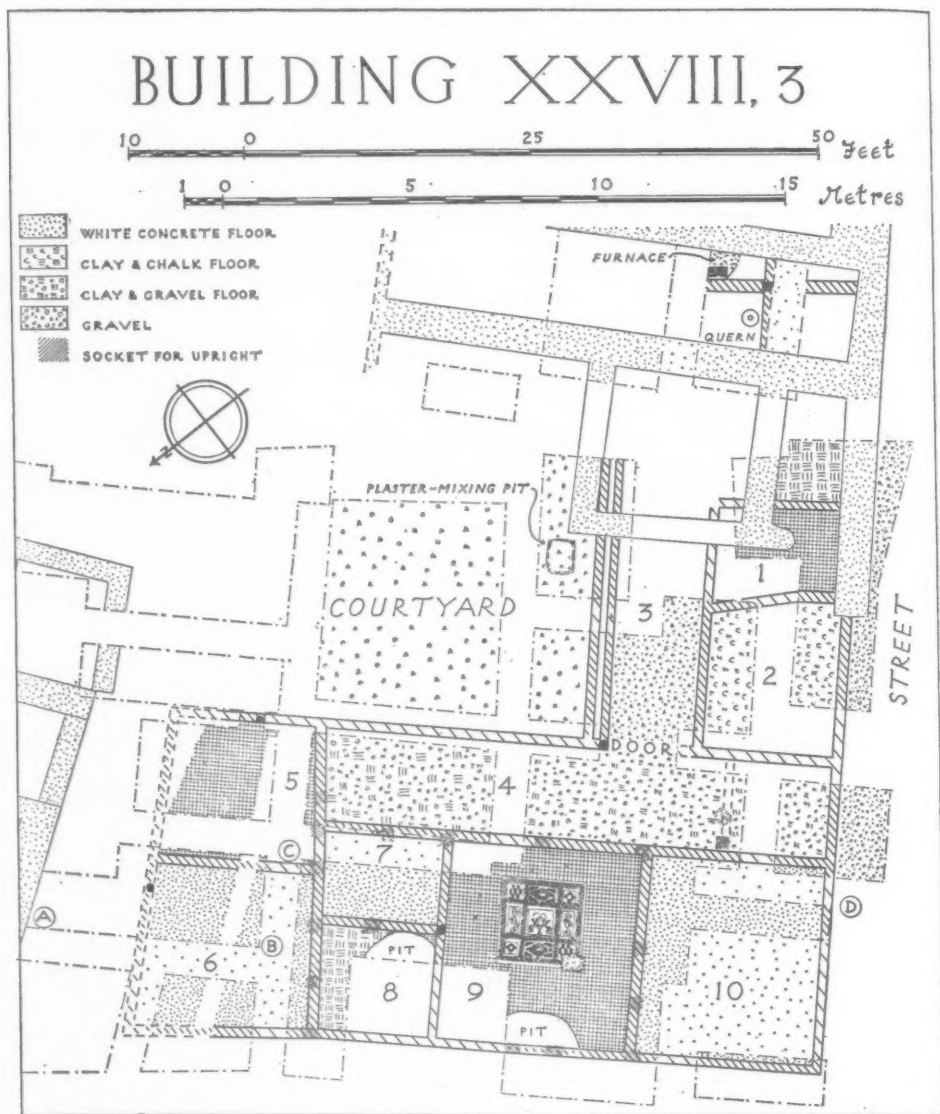


FIG. 6. Timber-framed building destroyed in the Antonine fire.

Building XXVIII, 3 a

Immediately below the floors of house XXVIII, 3 lay those of XXVIII, 3 a (fig. 7). This was a more simple house of only one wing lying end-on to the street.

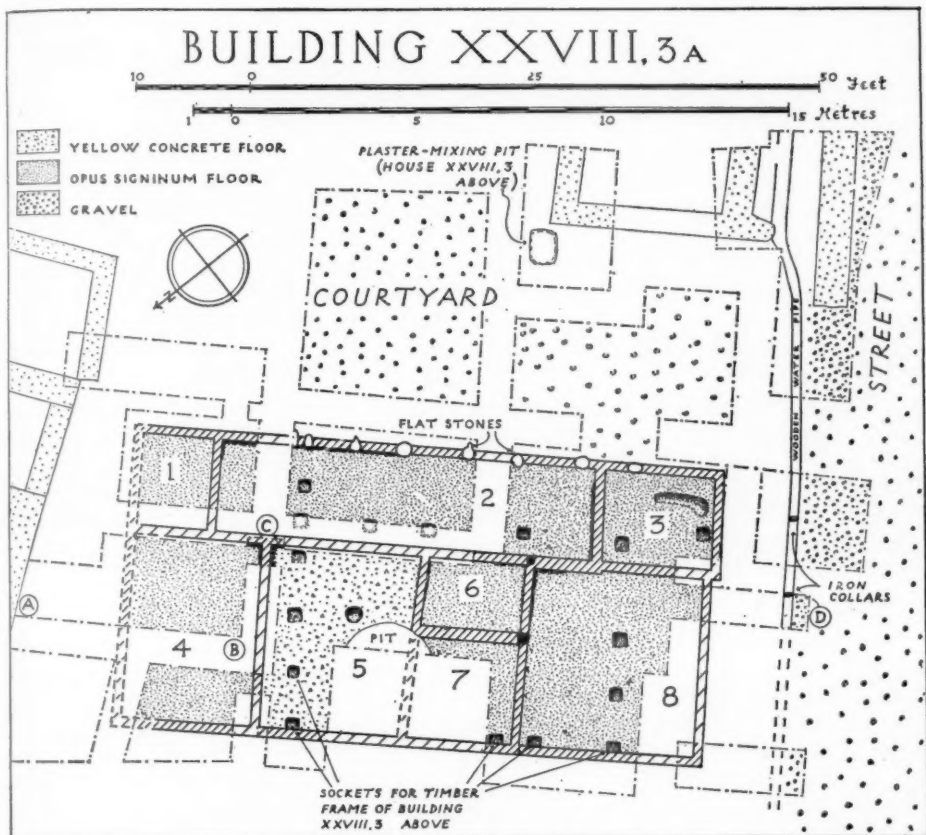


FIG. 7. Second-century timber-framed building below building XXVIII, 3.

Its main feature was the fine *opus signinum* with which all its rooms save one were surfaced. Its walls were marked by sleeper-beam trenches; but part of the south face of rooms 2 and 3 had large flat pieces of flint or pudding-stone at intervals, clearly as plates for uprights. It is possible that there was an open veranda along this side, giving access from a gravelled yard.

Lines of square depressions in its floors were found to be due to the main frame of XXVIII, 3, above: evidently the main uprights had rested on plates of wood some 10 in. square. These sockets underlay the wall-slots but also in some cases extended beneath the floor edges. They have been marked on both plans since they were only observed when the floors of XXVIII, 3 a were cleaned, and their alignments on the latter plan gives a clear picture of the lack of conformity between the two buildings internally. Both, however, seem to have occupied much the same width; the back (north) wall in each case had to be inferred from slight indications, since a

large shallow excavation began at this point for the footings trench of the west wall of XXVIII, 1.

But XXVIII, 3 *a* did not extend right to the street. A space of 7 ft. was left in front of the house, and below this space ran a contemporary water-pipe of wood, the channel of which and two adjacent iron collars were traced. These collars (for connecting the wooden pipes) lay 7 ft. apart. This pipe-line was later sealed by the erection of XXVIII, 3, right on the street line above it. The main presumably then was disused: but further iron collars were found at the base of the foundation trench of XXVIII, 1, already referred to. This other pipe-line was presumably contemporary with XXVIII, 3; the main now ran at the back of the house.

Building XXVIII, 3 *a* in turn overlay a further building, XXVIII, 3 *b*; but this has been explored only at one point where its south-east wall lay just below and to the north-west of the corresponding wall of XXVIII, 3 *a*. A coin of Nero was found in association with it. House XXVIII, 3 *a* appears to belong to the first half of the second century, and XXVIII, 3 in turn replaced it in the last decades of the century, for it overlay fragments of hunt-cup in Castor ware. The fire occurred not long after this, and may be correlated therefore with the Antonine fire in Insula XIV. It was after this fire that XXVIII, 1 was built. Its footings trench had cut through the burnt debris of XXVIII, 3, and the top part of the trench had been packed with this burnt material replaced, which at first was confusing to interpret.

Building XXVIII, 2 (fig. 5)

North-west of XXVIII, 1, and facing the street on the north-east of the insula, lay XXVIII, 2. This building was an oblong end-on to the street, and an extension (room 2) had been added at the back. The building was much disturbed. The footings of the original walls were of flints and yellow mortar; those of the extension were little more than loose cobbles and were intended only as a foundation for a timber or half-timbered wall. There were slight traces of white mosaic at the junction of rooms 1 and 2, actually lying on the south-west side of the dividing foundation; it was not clear whether this meant that in the second period this wall had been demolished, or whether the tesserae found (a single line of thirty white tesserae) marked the junction of a floor with a wooden wall narrower than the stone footing below. Room 1 contained a thick layer of broken pieces of unpainted wall-plaster which seems to have been a make-up for its floor; towards the rear was a hearth, and from it a gully ran down to the front wall of the house, passing through it in a channel lined with roughly squared limestone blocks. What happened under the street outside could not be traced; there was no indication of a continuation of the drain. It is possible that building XXVIII, 2 was a smithy.

Dating evidence bearing on the period of erection of this building was hard to discover; it will probably be found to belong to the fourth century.

Building XXVIII, 4

West of XXVIII, 2, traces were found of a building with clay walls, one room of which had had a tessellated floor, of which very little survived. The building had



a. Mosaic in Room 9, Building XXVIII, 3, overlaid by burnt daub and the gravel courtyard of Building XXVIII, 1



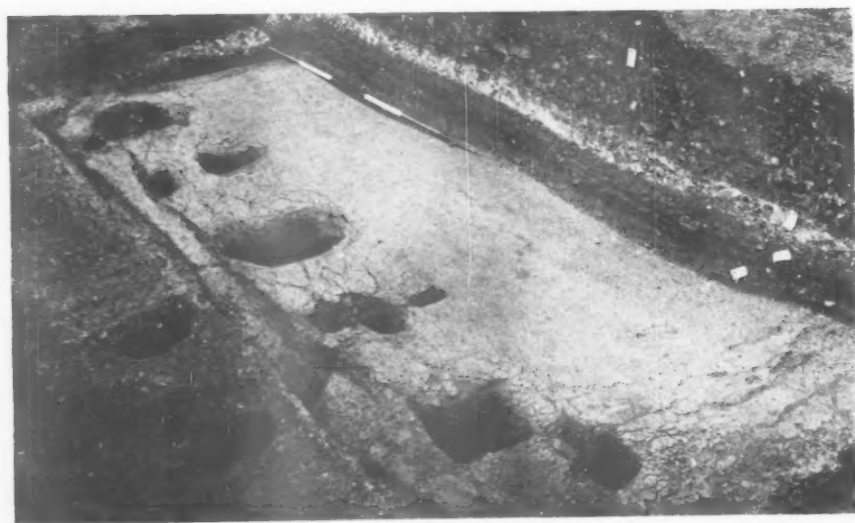
b. Apse of underground shrine in Building XXVIII, 1



a. Hypocaust in Room 18, Building XXVIII, 1, looking south-east



b. Oven and vessels in Room 16 on fig. 3, looking south



c. *Opus signinum* floor of an earlier phase below Room 36 on fig. 3, pierced by postholes of Period III (Building XIV, 5)

subsided into a large ditch along its western edge. More work requires to be undertaken on these features.

CONCLUSION

This year's work has made it certain that the extensive traces of conflagration previously observed in the Bluehouse Hill area were caused by the same fire which destroyed the wooden buildings in Insula XIV. It is interesting to note that a building excavated by Mr. J. Lunn in the Museum car-park (Insula XIII, 1) was also destroyed by fire at this time. It remains to re-examine the date¹ of the various burnt buildings found in 1930-4 in the southern part of the town, for if it turns out that all the most easily combustible buildings over a wide area of the town were burnt at about the same time, and on sites widely separated in space, it may be necessary to search for a context in history rather than in accident.

After the fire, Insula XIV remained unreconstructed for almost the whole of the third century. This, on a site right in the heart of the town and facing Watling Street, might be thought to reflect economic distress in the history of Verulamium at this time were it not that Insula XXVIII was at once rebuilt and on a massive scale. This building too, however, was not quite completed. It may be suggested that Insula XIV was for a while reserved for a public building, and the open space was meanwhile used as a market.

APPENDIX

Painted plaster from Building XXI, 2 (pl. 1)

THIS opportunity is taken to publish the recently restored panel of painted plaster which was excavated in 1956 in the south corridor of building XXI, 2, and dated to the second century. This panel was lying face down directly on the tessellated floor of the corridor and was covered by the red wall-plaster with swag patterns which had fallen from the south wall of the corridor. At the time of excavation it was thought that the purple plaster came from the opposite or north wall, and it was so described in *Antiq. Journ.* xxxvii, 13. It is now, however, thought to have been the ceiling of this corridor. This interpretation is consistent with its having fallen first and is demanded by the details of decoration.

As restored the greatest dimensions are 6 ft. 9 in. high by 6 ft. 6 in. wide. The background is painted purple, on which lie a series of oblong panels 10 in. by 9 in. outlined by foliated yellow stalks with barley heads in the connecting diagonals. The intervening spaces carry three circular flowers connected by leafed yellow stems. The flowers have a light-green centre and the surrounding circle and petals are white. The oblong panels contain doves which stand at all angles. In the lower central range two alternate panels contain small yellow feline heads, c. 3½ in. high, recalling those figured on the peopled-scroll frieze from the same building published in *Antiq. Journ.* xxxvii, pls. iv and v. The seeming random nature of their appearance is probably due to the small proportion of the whole pattern to be recovered. At the bottom is a straight border consisting of a yellow line; the top border does not survive, but was probably just beyond the top

¹ Changes in the dating of samian and Castor ware in recent years would make such a reappraisal possible.

of the top remaining panels. The corridor was only 7 ft. 9 in. wide, so only 1 ft. is missing from the total original width of the painting. That the painting came from the ceiling is demanded by the various positions of the doves, which only make sense when viewed from below, and this interpretation is reinforced by the octagonal outlines formed by the barley-heads, which are clearly reminiscent of the coffers of more elaborate ceilings. A similar though more ornate scheme has been published from the Legate's Palace at Aquincum.¹

A very great debt of gratitude is owed to Dr. Norman Davey, F.S.A., who undertook the most laborious task of remounting the fragments as lifted in the field. The plaster had been badly fractured by its fall direct on to the tessellated floor, and the task occupied some 800 hours of his leisure. It is now displayed in the Verulamium Museum.

¹ Szilágyi in *Carnuntina* (1956) taf. xxiv. 1.

THE CARNYX IN EARLY IRON AGE BRITAIN*

By PROFESSOR STUART PIGGOTT, V.-P.S.A.

ONE of the most spectacular pieces of martial equipment in use among the Celtic peoples in the later stages of the La Tène culture was the animal-headed war-trumpet, the name of which, in Greek versions, has been preserved variously as *karnon* or *karnyx*.¹ In the latter form, the name *carnyx* has been applied by archaeologists to the fairly plentiful representations and the very few surviving fragments of such instruments. Of the latter, the best-known is that represented today only by drawings and engravings, dredged from the river Witham at Tattershall Ferry in 1768. It is the purpose of this paper to discuss this object once again, and also to put forward the suggestion that the sheet-bronze object in the form of a boar's head, found at the beginning of the nineteenth century at Deskford in Banffshire and fortunately still surviving, is in fact the mouthpiece of another *carnyx*.

THE TATTERSHALL FERRY FIND

The crossing of the river Witham now marked by Tattershall Bridge lies eighteen miles south-east of Lincoln, and from the river between this point and the city of Lincoln itself a remarkable number of Iron Age objects of fine metalwork have been recovered, including two of the most famous finds of this type in Britain, the well-known Witham shield, and the bronze scabbard-mount of an iron sword. Other swords and scabbards were found in the river at Washingborough, just below the city, and at Bardney Abbey, almost midway between Lincoln and Tattershall, while the remarkable anthropoid-hilted dagger in its sheath is presumably again from this prolific stretch of the river Witham. Attention was drawn to this concentration by Mr. C. W. Phillips in 1934, when he also stressed the importance of the *carnyx* find, illustrating the lost object by a reproduction of the engraving which had been published in *Horae Ferales*.²

The original publication was printed ten years after the find, and is remarkable

¹ My colleague Professor A. J. Beattie very kindly provides me with notes on the literary sources: the words are known only from late lexicographers. The form *κάρνον* is given by Hesychius, with the meaning of 'trumpet', and assigned to the Galatians. *κάρνυξ* is given by Eustathius (1189 = 1139. 56-57) and in the scholion on *Iliad*, 18. 219 in virtually identical passages presumably deriving from a common original. Both describe it as a trumpet with an animal 'bell' or mouth, with a leaden tube, and assign it to the Celts and the Galatians. Polybius in the second century B.C. (ii, 29. 6) describes Celtic war-trumpets, using the phrase *βυκανητῶν καὶ σαλπικτῶν*, either indicating two types of trumpet or more likely glossing an unfamiliar word by adding 'and trumpeters'; Diodorus Siculus a century later

(v, 30) and in a similar context refers to trumpets 'peculiar and such as barbarians use', but neither employs the word *carnyx*. The basic archaeological studies are those of F. Behn (*Mainz. Zeitschr.* vii (1912), 36; *Reallexikon*, viii (1927), 357; *Musikleben in Altertum* . . . (1954), p. 145) and Joseph Déchelette (*Manuel d'Arch., Âge du Fer II* (2nd ed. 1927), p. 683).

² *Arch. Journ.* xci (1934), 103-5, 183, with full references to earlier publications. Cf. also *Proc. Prehist. Soc.* xvi (1950), 1-28 (swords and daggers); *ibid.* xxi (1955), 198-227 (anthropoid dagger, no. 48, Class G variant); *Linc. Archaeol. & Architect. Soc. Reports & Papers*, vii (1957), 9 and fig. 1 (sword and scabbard).

* Published with the aid of a grant from the Council for British Archaeology.

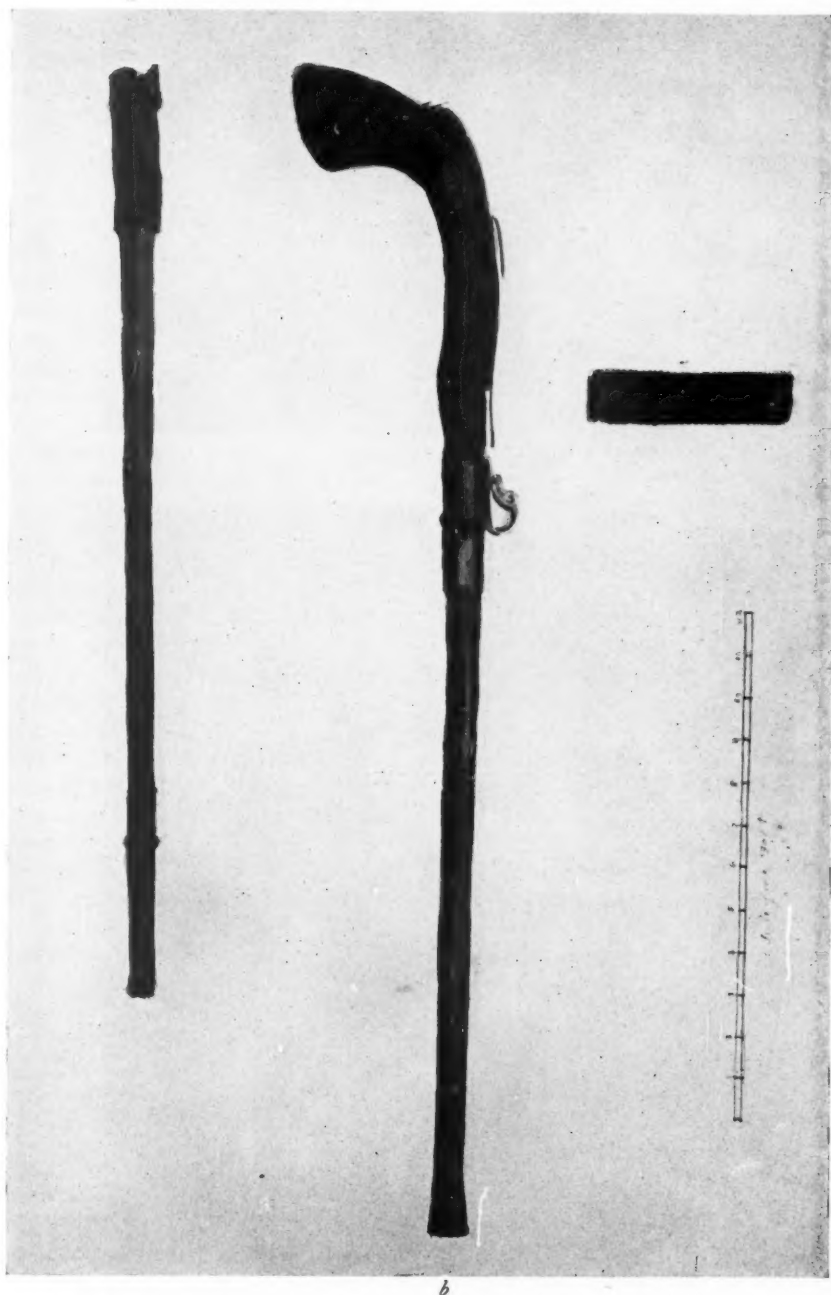
in more than one way. It is a paper by Dr. George Pearson, communicated to the Royal Society and published in their *Philosophical Transactions*,¹ and it represents one of the first recorded attempts to apply scientific techniques to determine the nature and composition of prehistoric and Roman bronze objects. The antiquities examined (which included the *carnyx*, an Iron Age sword-scabbard, several Late Bronze Age spear-heads and axes, and a Roman patera) were in the collection of Sir Joseph Banks, 'whose zeal for science induced him to sacrifice them to chemical analysis'. What this seems to have involved, we will see later, but for the present we may note Dr. Pearson's comments on the *carnyx*. It was, he said, 'neatly made', but 'is imperfect, a little of both ends being broken off'. It had been made of a sheet of hammered metal (bronze) 'about one-twentieth of an inch thick', and 'the juncture of the edges of the metal, the whole length of the tube, was preserved by means of a solder clumsily applied': this solder he determined as being tin.

So far, so good. We are surprised and delighted by this precise technological examination of a prehistoric object in the late eighteenth century. But as we read on, past the descriptions of the other antiquities, and come to the latter part of Dr. Pearson's paper, we realize with mounting horror what was meant by Sir Joseph's 'sacrifice'. Pearson is talking about the necessity of comparing freshly fractured surfaces of metal—'to judge accurately from these appearances the metals to be compared with one another should be in the same state of aggregation'. He then goes on—'I therefore melted the old implements, and cast them into the same ingot mould . . . each of these ingots was fractured by a pretty smart stroke with a hammer.' One's first conclusion from this remarkable statement would be that the *carnyx*, like the other objects, went wholesale into the melting-pot, and that we must abandon any hope of its reappearance. On the other hand, we may note with some relief that one of the objects examined by Pearson appears to have survived virtually intact, the bronze sword-scabbard with its contained iron sword, which he illustrates, and which is today in the Lincoln Museum. Unless there were two identical scabbards, one melted, one surviving, we must assume that Pearson illustrated the actual object we see today, and from what we know of Early Iron Age armourers' practice the production of two exactly similar decorated scabbards is most unlikely. Perhaps therefore we may yet hope that the *carnyx* survived, at least partially. In the meantime, we must rely on the available illustrations.

The engraving given by Dr. Pearson was copied in *Horae Ferales*, and this was again reproduced by Mr. Phillips.² Fortunately the original drawing made for Sir Joseph Banks survives in one of the volumes of drawings made for him by various artists, including J. C. Nattes (1765?–1822), and now in the Public Library in Lincoln. This (pl. vi) is a careful pen-and-wash rendering of the *carnyx* to scale, with an enlarged detail of the decorative band. The tube is shown in two parts, and Mr. Phillips took this to imply that there were in fact fragments of two trumpets, but the letters 'b' 'b' at the ends of the two drawings (visible on the original though not on the reproduction here given) show that the tubes in fact joined at these points—'the parts which appear like joints are pieces which slide over the tube for ornament', Dr. Pearson had observed. The Banks drawing includes (as

¹ *Phil. Trans.* lxxxvi (1796), 395, and pl. xi.

² *Loc. cit.*, pl. xxi.



Original drawing of *carryx* fragments found at Tattershall Ferry, Lincs., in 1768



a. Trophies including the *corymb*, Orange



b. *Corymb*-blowers on the Gundestrup cauldron

does Pearson's engraving) a Roman coin showing crossed trumpets of *carnyx* type for comparison.¹

We may then start our new discussion of the Tattershall trumpet with the realization that the original was almost twice the length of the upper part which is usually illustrated as the whole instrument—allowing for an overlap at the joint, the overall length must have been some 50 in. And when we turn to one of the best-known and most detailed representations of the Celtic animal-headed trumpets in action, the scene on one of the panels of the Gundestrup cauldron (pl. vii*b*), we see that, while one obviously cannot use the human figures as a scale in the strict sense, the proportion of *carnyx* to man is evidently visualized in terms of a very long trumpet, for which a length of 4 ft. or more is clearly more appropriate than little more than half that figure. Another point brought out by the Gundestrup scene in connexion with the Banks drawing is one commented on by musicologists on more than one occasion, namely that the trumpets are being blown by a mouthpiece set at right-angles or obliquely to the vertically-held tube: such an oblique mouthpiece appears in fact to be shown at the lower end of the detached tube of the Tattershall *carnyx* in the drawing.²

As a *carnyx* is by definition an animal-headed trumpet, the Tattershall object can only be placed in this category on the assumption that it possessed an animal-headed mouth which was structurally separate and pulled off the trumpet in antiquity. We have seen that Pearson drew attention to the broken ends of the main fragment of the trumpet, and Franks noted the 'irregularly shaped mouth' in his description of the *Horae Ferales* illustration, as does Phillips in his account. Behn, however, seems to have been the first to point out that such an animal head must have been wrenched off the trumpet mouth, and that the fin-like ornament on the outer edge of the curve ('like a mane' in Phillips's words) was in fact the broken remnants of a crest such as we see on the Gundestrup and other representations. Gundestrup shows well, too, not only the three joints in the *carnyx* tube, but what appears to be another structural joint in the metal-work, at the back of the animal's head, in precisely the position we have assumed for the torn-off mouthpiece of the Tattershall trumpet, and, as we shall see, the assumption of similar joints is necessary in the interpretation of the Deskford piece.

We see then that in its complete form the Tattershall *carnyx* would have consisted of a jointed straight tube with an oblique mouthpiece for blowing at its lower end, and curving and expanding at its upper end to a point where it was joined to a hollow sheet-bronze animal's head with wide open jaws, now lost. From the back of this head (which may well, on analogy, have been that of a stylized boar) ran a conventionalized crest in the form of a corrugated fin of metal fixed

¹ I am much indebted to our Fellow Mr. F. T. Baker of the City and County Museum, Lincoln, for his help and for supplying me with a photograph of the drawing, here reproduced (pl. vi). The volumes of drawings are referred to by Mr. Phillips (*loc. cit.*, p. 156): they were at that time in private hands.

² The Gundestrup scene has often been illus-

trated since its original publication by Sophus Müller in *Nord. Fortids.* i (1892), pl. vi: e.g. Brønsted, *Danmarks Oldtid*, iii (1940), 94, fig. 76; Klindt-Jensen, *Foreign Influences in Denmark's Early Iron Age* (1950 = *Acta Arch.* xx (1949), 1-229), p. 125, fig. 78 *z*. I am indebted to Dr. Klindt-Jensen and the National Museum, Copenhagen, for the photograph here reproduced (pl. vii*b*).



a. Trophies including the *carnyx*, Orange



b. *Carnyx*-blowers on the Gundestrup cauldron

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² The Gundestrup scene has often been illus-

trated since its original publication by Sophus Müller in *Nord. Fortids.* i (1892), pl. vi: e.g. Brønsted, *Danmarks Oldtid*, iii (1940), 94, fig. 76; Klindt-Jensen, *Foreign Influences in Denmark's Early Iron Age* (1950 = *Acta Arch.* xx (1949), 1-229), p. 125, fig. 78 *z*. I am indebted to Dr. Klindt-Jensen and the National Museum, Copenhagen, for the photograph here reproduced (pl. vii*b*).

to the outer curve of the expanded tube, terminating at the uppermost joint in the straight part of the trumpet in a decorative curled-back device, which—it can be clearly seen in the Banks drawing—is in fact a duck's head of a well-known La Tène type. This little head appears to have had sockets for the attachment of coral or enamel at the eyes and on the sides of the upturned bill.

We may now turn to the question of the date and stylistic affinities of the Tattershall piece. Before considering such evidence as can be derived from the trumpet itself, we may review briefly the range of date of the main representations or surviving fragments. The ox-headed *carnyx* shown among the trophies on the well-known Pergamon reliefs from the temple of Athene Nikephoros indicates its presence among the Galatians in the early second century B.C.; here, too, the Greek references to the use of the *carnyx* by these people and among the Paphlagonians would be appropriate to a period before the incorporation of the latter with the Galatians by Augustus in 6 B.C.² A denarius, signed by Scaurus, of either 92 or 118 B.C., and believed to depict the Gaulish chieftain Bituitos, shows him brandishing a *carnyx*,³ and to this date of c. 100 B.C. the Gundestrup cauldron, despite attempts to place it in later contexts, would most satisfactorily belong.⁴ Into the first century B.C. would come most of the Roman representations, such as those on the triumphal arch of Orange (Caesarian or just after: pl. viia), and at the end of this century and early in the first of the Christian era we have for Britain the representations on Belgic coins such as those of Tasciovanus and Eppillus, recently illustrated and discussed by Mr. Derek Allen.⁵

The *carnyx* fragment in the museum of Le Mans appears to be without context,⁶ but an unrecognized piece of what must have been such a trumpet is contained in a South German hoard of Late La Tène metalwork, and is published here for the first time (pl. xa). The find was made in a peat-bog at Dürnau, in the Federsee region of the Schwäbische Oberland, and is now in the Federseemuseum at Buchau.⁷ It largely consisted of iron objects, comprising tools and part of a fire-dog with typical knobbed horns, bronze vessels including part of a cauldron or bucket, and bronze objects including the trumpet fragment in question, 34 cm. in length overall, 8.5 cm. wide at the larger end and 2 cm. inside diameter at the narrower. The main part of the tube is made of two sheets of bronze riveted together, in such a way that there is a flange along the outer curve (fig. 2, a, b). There are traces of the attachment of a lost portion near the wider end, and one assumes that the flange would hold a metal crest, and that the straight tube of the *carnyx* would fit into the collar at the surviving fragment's smaller end. Reinert, in publishing part of the hoard, dated it to the middle of the first century B.C. and connected it

¹ T. G. E. Powell, *The Celts* (1958), pl. 48.

² Behn, *op. cit.*

³ *Antiquity*, xxvi (1952), 87 and pl. 1. Other Roman and Gaulish numismatic representations are quoted by Evans, *Coins Anc. Brit.* (1864), p. 192. Most of the monumental representations are in Espérandieu: cf. Déchelette, *op. cit.*, for references.

⁴ For the date of the Gundestrup cauldron, see P. Jacobsthal, *Early Celtic Art* (1944), p. 2—'an

East Celtic work of the first century B.C.'; Klindt-Jensen, *op. cit.*, pp. 119 ff.

⁵ *Proc. Prehist. Soc.* xxiv (1958), 44; pl. 1, nos. 1-5.

⁶ Behn, *op. cit.*

⁷ I am indebted to Dr. Adolf Rieth of Tübingen for kindly obtaining the photograph here reproduced (pl. xa), and for drawing the sections given in fig. 2.

with the events associated with Ariovistus.¹ The hoard is comparable with others from Germany, the most striking being that from Straubing, of the Roman period; the most likely explanation is that they are in some sense votive, as appears to have been the case with their counterparts in this country: Llyn Cerrig with its trumpet fragment (though of another type) springs to the mind.²

We have then a likely range of date between the second century B.C. and the first century A.D. provided by material closely comparable with the Tattershall *carnyx*. We may now turn to the object itself in search of any stylistic comparisons which may serve to place it in the general sequence of Early Iron Age metalwork in Britain. In the absence of the main decorative feature, the animal head itself, we have to fall back on two minor pieces of ornament recorded in the Banks drawing—the duck's-head terminal of the crest or mane, and a band of ornament encircling the tube below the point of curvature and expansion, of which a separate enlarged and developed view is given on the original drawing (fig. 2c).

While bird-head terminals are a well-known feature recurring through Celtic art, the type with upturned bill is the less common, though present, in forms not dissimilar to what must have been the original appearance of the Tattershall bird, on for instance Early La Tène brooches on the Continent; here, too, with eye-sockets for coral or enamel. But the obvious counterpart in the British Isles is the superb bird-head handle of the Keshcarrigan bronze cup from Co. Leitrim. The present writer, publishing this piece in connexion with the bird-head terminals of the horns in the Torrs find,³ was at first inclined to consider it an early product of a school closely allied to that of Torrs, of the second or even third century B.C. Mr. E. M. Jope and Mr. B. C. S. Wilson have, however, shown how, on technical as well as stylistic grounds, the Keshcarrigan cup must be closely linked with that from the Colchester Belgic burial of c. A.D. 10–25, and with similar bowls from the Birdlip burial and from Stanwick, similarly of early first century A.D. date.⁴

A date in the early first century A.D. then could be claimed for the Tattershall *carnyx* on the grounds of the bird-head terminal, but since this type has a long chronological range, an earlier date is not excluded. But when we turn to the decorative band, the comparatively late date suggested by the Keshcarrigan comparison is confirmed. We can probably accept the Banks drawing as an accurate representation of what the artist saw, and not a muddled misinterpretation. The comparable drawing of the surviving Early Iron Age sword-scabbard, already mentioned in connexion with Dr. Pearson's investigations, has an accurate enough rendering of the rather debased La Tène motifs with which it is decorated. In other words, the uninspiring band of ornament looking like the links of a chain between a double-beaded border on the Tattershall trumpet-tube should be accepted as it stands, and not regarded as an incompetent draughtsman's rendering of something better.

The pattern can hardly be said to have any perceptible elements of the La Tène

¹ *Das Federseemoor als Siedlungsland des Vorzeitmenschen* (1929), p. 162, pls. xxxiv–xxxv.

² J. Keim and H. Klumbach, *Der römische Schatzfund von Straubing* (1951); I have discussed

the comparable British hoards in *Proc. Soc. Ant. Scot.* lxxxvii (1952–3), 1–50.

³ *Arch.* xcvi (1955), pp. 222, 231, pl. lxxxiii.

⁴ *Ulster Journ. Arch.* xx (1957), 85.

art-style, but is accurately paralleled on a Roman bronze strip from Richborough, dated before A.D. 85.¹ The beaded border could be well enough compared with similar beading along the edges of the bronze strips from Stanfordsbury and Rodborough, comparable to others (without such a border) from Llyn Cerrig, and all attributable to a date in the first half of the first century A.D.² There seems every reason then for accepting the Keshcarrigan parallel for the duck's-head motif and regarding the *carnyx* under discussion as of the early first century A.D. A minor point, for what it is worth, is that the curled end of the crest on the Tattershall piece (although here elaborated into a bird-head terminal) might be compared with the curled ends of the formidable crests on the Capel Garmon (Pentre Voelas) iron fire-dog, again a work likely to fall within the same period.³

It is probable, indeed, that the *carnyx* as a type may be a late-comer into the Celtic world. It has often been suggested that its form is in fact the classical *lituus* with the addition of a barbaric beast's head, and it may well have been derived in later La Tène times from a Roman source. The Celtic trumpets of the type of Annaclone and Lough-na-Shade may represent an earlier tradition, related to the Irish and Danish Late Bronze Age trumpets and *lurer*, though the former have themselves been thought to have been influenced by the *lituus* in its earlier, Etruscan, form.⁴

To sum up: the objects found in the bed of the river Witham at Tattershall Ferry in 1786 and represented in the Banks drawings were two parts of the jointed tube of a trumpet of *carnyx* type from which the animal-headed mouth-piece had become detached, but which retained part of the stylized mane or crest proper to such a type. Comparative evidence implies the existence of the *carnyx* in the Celtic world from at least the second century B.C. onwards, and the decorative motifs of the Tattershall example suggest a date in the first half of the first century A.D. for this particular piece. The possibility of Belgic affinities should not be forgotten, and in such a context the sword-scabbard mentioned more than once in this paper as a river Witham find would take its place, since it belongs to a series (the writer's Group V) with similar affiliations.⁵

THE DESKFORD BOAR'S HEAD

In about 1816 a remarkable find was made during peat-digging on the farm of Liecheston in the parish of Deskford, Banffshire. At a depth of 6 ft., in peat containing hazel-nuts, an object of sheet bronze, recognizable as the stylized representation of a boar's head, was found, and at the time of finding it had 'a wooden tongue, movable by springs. It had also eyes' in the now empty sockets.

¹ Richborough IV, p. 113, pl. xl, no. 152.

² C. Fox, *Arch. Camb. Region* (1923), pl. xviii, 4; *Llyn Cerrig Bach* (1946), p. 21, pl. vb; *Brit. Mus. Early Iron Age Guide* (1925), fig. 169. Cf. Lexden (though not so close), *Arch.* lxxvi (1927), pls. lxx, lxx. Stanfordsbury is dated to c. A.D. 50 by Hawkes and Dunning, *Arch. Journ.* lxxxvii (1930),

261.

³ S. Piggott and G. Daniel, *Picture-Book Ant. Brit. Art* (1951), nos. 51-52, with references.

⁴ Cf. H. Hencken, *Journ. Roy. Soc. Ant. Ireland*, lxxxi (1951), 6.

⁵ *Proc. Prehist. Soc.* xvi (1950), 1-28; pl. 11, right.

These circumstances were recorded in the *New Statistical Account of Scotland* (1845) under the parish of Deskford, and the first archaeological publication of the object, quoting this account, was in 1867, when J. A. Smith discussed the Deskford head in connexion with the Torrs 'chamfrein', coming to the conclusion that 'both these bronzes therefore, may possibly be considered as having been worn as peculiar, official, or at least very distinguishing and singular head gear'.¹

If conceived of as a piece of head-gear to be worn by a human being, the Deskford head (no less than the Torrs horse-cap) would have been both peculiar and singular, since the overall measurements of the main surviving fragment are but $8\frac{1}{2}$ in. long and $5\frac{1}{2}$ in. in diameter (pl. viii).² It is not clear how Smith visualized its being worn: he perhaps thought of it as an emblem set on the top of a helmet, since he quotes the Benty Grange Saxon find in this connexion. However that may be, he goes on to describe the find in commendable detail.

There were in fact several pieces of worked bronze sheet comprising the Deskford find, now on loan to the National Museum of Antiquities of Scotland. The main element consists of a sheet of bronze bent to a tubular form and containing the eye-sockets of the boar surrounded by elaborate repoussé mouldings, to which is riveted the upper part of the animal's jaw and snout, the latter turned up and with rivet holes to take a now missing frontal plate. The lower jaw, now fixed to this main portion by modern attachments, was originally movable, swivelling on rivets at the angle of the jaw, which is prolonged interiorly on each side in narrow projections hooked at the end: one feels that these are somehow connected with the mysterious 'wooden tongue, movable by springs' referred to in the original account. What looks like a bronze tongue can now be seen in the reconstructed head, but as Smith rightly pointed out, the ribbed bronze sheet now fixed to the lower jaw is an accurate representation of a pig's palate, and so should belong to the upper part of the mouth, and not, as now fixed, to the lower jaw (pl. viii a).

With the pieces of the head as just described was a circular dished bronze plate with flanged edge $5\frac{1}{2}$ in. internal diameter, and more or less centrally perforated by a roughly circular hole, 2 in. in diameter, from which some attachment appears to have been torn away; radially from this hole a ragged strip of bronze has been torn from the disc in antiquity (pl. ix c). In any interpretation of the Deskford find this disc posed a problem, since (as Smith observed) it does not fit against the flanged circumference of the main piece of the head, 'being a little larger in its circumference; it should not therefore have been so attached to the head'.

Before proceeding to a suggestion that in the Deskford find we have just that animal-mouthed termination of a *carnyx* which is missing at Tattershall, it should

¹ *Proc. Soc. Ant. Scot.* vii (1866-7), 334; J. Anderson, *Scotland in Pagan Times: Iron Age* (1883), p. 118, repeats Smith's illustrations and gives a précis of the account. The head was not mentioned by E. T. Leeds, *Celtic Ornament* (1933), nor by V. G. Childe in *Prehist. Scotland* (1935). The

first published photograph was in Piggott and Daniel, *op. cit.*, no. 61.

² The photographs of the Deskford head here reproduced (pls. viii and ix) are by Malcolm Murray, Department of Prehistoric Archaeology, University of Edinburgh.

be noted that the find as we have it (head with lower jaw and palate; bronze dishd disc) is obviously imperfect, since no representation of a boar, least of all in La Tène art, could omit the prominent ears of the animal.¹ In other words, we have in the Deskford fragments only part of the boar's-head feature of the *carnyx*-mouth we are supposing it to have formed. In any arrangement of the Deskford pieces as fragments of a *carnyx* we must interpose a lost section including the boar's ears.

It cannot be claimed that this suggested explanation of the curious boar's head is more than a plausible guess, which, however, does seem to provide a more reasonable use for it than any previously advanced. Even the old report of a movable wooden tongue, at first sight a rather bizarre and improbable feature, could be explained by this means, since Behn has pointed out that certain *carnyx* representations do in fact seem to show a separate tongue within the open mouth, which he interpreted as a vibrating metal strip which would add to the discordant noise which such trumpets doubtless produced. But if we go so far as to agree that the main part of the Deskford find could be interpreted in this manner, what of the puzzling bronze disc associated with it, which as Smith pointed out can hardly be fitted against the open back of the boar's head as it now survives, since the diameters of head and disc are not coincident?

If we assume that the complete *carnyx* would have had, not only the surviving element of the front part of the boar's head, but a now missing portion bearing the conspicuous ears and the beginning of the crest which would continue over the curve of the main trumpet-tube, any question of uniting the disc to the present forepart of the head would not arise. The disc has clearly been fixed to something by its flange, and something has been broken away from it, leaving the curious pattern of broken metal, of an eccentric hole with a tear leading radially from it. Its possible place in a reconstructed *carnyx* is shown in fig. 1b, as a back-plate joined to the rear of the missing element which carried the boar's ears, and connecting this to the tube of the trumpet and the fin-like metal crest; the tearing away of trumpet-tube and crest from the back plate would produce just the type of damage which we now see on the disc. An immediate objection would be that in all *carnyx* representations such a junction of head-piece to tube is not shown, but a steadily expanding curve joins the two parts. This is true, but it may be replied that except for the very small representations on Belgic coins our iconography is Continental and largely Gaulish, and that it might be rash to extrapolate from this material to Scotland when it comes to details of construction.

Whatever the function of the Deskford head, it is worth further examination as a piece of Celtic art, and such an examination should lead to an approximate dating. The selection of a boar as a motif needs no comment in view of the importance which this animal must have had in early Celtic mythology: on the Gundestrup scene already quoted (pl. viiib) the beast appears not only as the motif for the *carnyx*-head, but as a helmet-crest as well, and there are numerous other representations

¹ Cf. the Gundestrup *carnyx* representations (surely boars and not wolves, *pace* Allen, *Proc. Prehist. Soc.* xxiv (1958), 45), and, among other

examples, the Hounslow figurines (Piggott and Daniel, *op. cit.*, nos. 66, 67), and also other representations noted below.

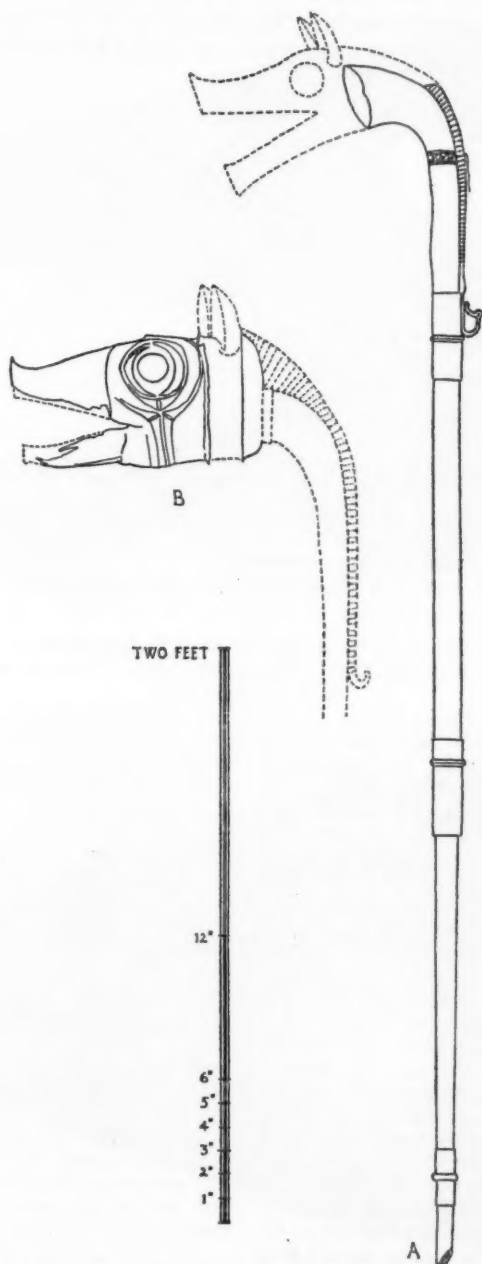


FIG. 1. A. The Tattershall *carnyx* restored; B. The Deskford head as a *carnyx*-mouth.

throughout the pagan Celtic world.¹ The statement in the original description that it 'had eyes' may be taken to imply that the now vacant eye-sockets, 1.4 in. diameter,

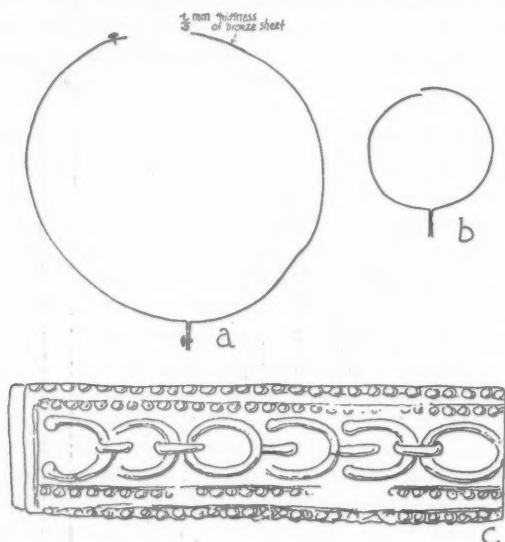


FIG. 2. Sections of the Dürnau carnyx (a, b; after Reith); c, Ornament on Tattershall carnyx redrawn from eighteenth-century drawing (a, b, $\frac{1}{2}$; c, approx. $\frac{1}{2}$).

¹ Among the numerous representations of boars in Celtic art may be noted the 'standards' among trophy-groups such as that at Orange (pl. viii); the Neuilly-en-Sullias bronze (Varagnac *et al.*, *L'Art gaulois* (n.d.), Sculpture, pls. 47, 48); the relief-carving on the Eufigneix figure (*ibid.*, pl. 7; Powell, *The Celts*, pl. 67); the little bronze from Bata, Hungary (Jacobsthal, *Early Celtic Art*, no. 371); the Gundestrup silver reliefs already noted; that in bronze on the Rynkeby cauldron (Klindt-Jensen, *op. cit.*, p. 111, fig. 68b; and that on a silver bowl from Lyon (*Amer. Journ. Arch.* lv (1951), 47). The boar also figures on Gaulish coins of various tribes (L. Lengyel, *L'Art gaulois dans les médailles* (1954), pls. x, xxiii, xl, xli, xlii, xliii, xliv; G. Fabre in Varagnac *et al.*, *op. cit.*, Les Monnaies, pl. 5, nos. 15, 21). In the British Isles there are the Hounslow figurines mentioned above; the outline of the (lost) figure on the Witham shield (*Horae Ferales* (1863), pl. xiv, 1; *Brit. Mus. Early Iron Age Guild* (1925), p. 101, fig. 113); the unlocated Irish bronze figurine (F. Henry, *Irish Art* (1940), pl. 4c); and the Romanized bronze from the Lexden burial (*Arch.*

lxxvi (1927), pl. lviii, fig. 4). Coin representations include those of Tasciovanus, Cunobeline, Dubnovellaunus, and the Iceni (Mack, *Coinage Anc. Brit.* (1953), nos. 164, 183, 220, 223, 243, 245, 291, 299, 405-11, 434).

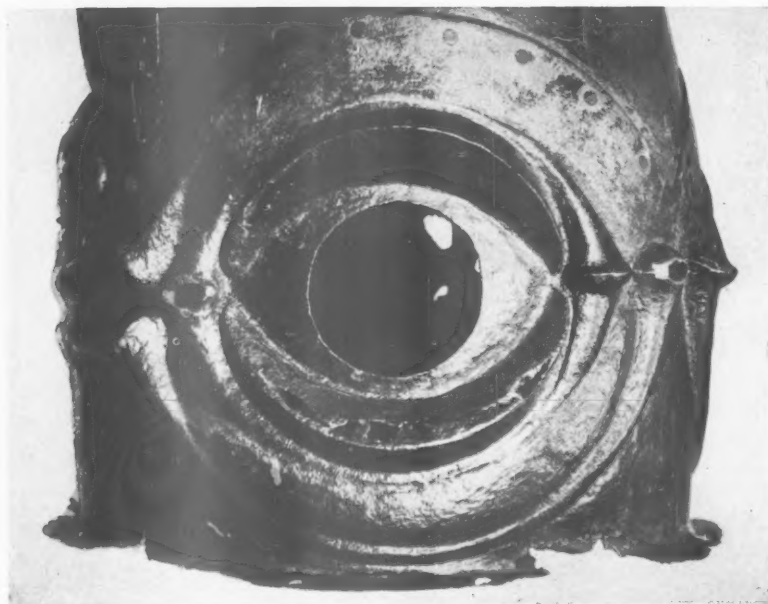
The presence of pig bones in quantity in La Tène grave offerings in Britain and in central Europe may also be noted: *Arch. lx* (1906), 265; Ambros in Benedík, Vlček, and Ambros, *Kelt. Pohřebiská na Juhovýchodnom Slovensku* (1957), pp. 295-305 (Czech and German text). Dr. Anne Ross, with whom I have discussed this subject, draws attention to the deity Moccus attested by the Langres inscription for Gaul, and the Celtiberian boar-figures in central Spain (Powell, *op. cit.*, p. 146), as well as to the place played by pork in the traditional Old Irish literature for feasts both heroic and supernatural. She also notes the association of boars both in early Welsh and early Irish sources with warfare and destruction on the one hand, and with fertility and agricultural prosperity on the other.



a. Bronze boar's head from Deskford, side view



b. Bronze boar's head from Deskford, top view



a. Deskford head; detail of eye



b. Deskford head, rear view



c. Bronze plate associated with the Deskford head

were filled with plates (for which traces of attachment can be seen inside the head), either painted or more likely enamelled, in the manner of those originally filling the openings in some at least of the Castle Newe type of bronze armlets to which reference is made below. Such inserted, more or less realistic, eyes in bronzes representing animals or human beings is ultimately an oriental and classical tradition but common also in Celtic works—the startling blue-and-white eyes of the Bourray statue, of which one survives, show us what must have been the original appearance of the bronze mask-faces such as that from the Tarbes region, or the smaller examples from Garanières-en-Beauce and Charterhouse-on-Mendip. The pupils at least of the frontal heads on the Marlborough bucket, like their counterparts on the Gundestrup cauldron, must have been filled with some now lost inlay, so too the little heads from Stanwick (pl. xia).¹

The repoussé ornament on the Deskford head is in fact directly related to the eye-sockets, and forms a symmetrically arranged pattern centred upon them. The circular pupil, which we have assumed to have been filled with a coloured enamel plate, is set in a vesica-shaped and slightly convex area representing the remainder of the eye-opening, and this is sunk between and framed in boldly projecting ridges above and below. Outside these, relief trumpet-mouldings form another vesica-shaped frame, the paired trumpets at the two sides of the eye joining in a lentoid moulding in high relief. 'Eyebrows' are provided by a pair of similarly treated trumpet-ended mouldings terminating in bold domes or half-lentoids, on each side of the centre line of the top of the head. Under each eye another such moulding starts on the outside, but fades out. On the underside of the head these upper and lower mouldings are carried round as a double low-relief ridge, joined at the outer edges of the eyes by double-trumpet-and-lentoid relief motifs.

We have already referred to the bronze armlets from Castle Newe, Aberdeenshire, in connexion with the enamelled plates set in circular openings which they possess. This pair of very massive ornaments of a distinctive and peculiar pattern may be taken as typical of a series of at least a dozen closely similar armlets from sites in Scotland from Sutherland to the Tweed, but unknown elsewhere save for a single find in Ulster.² They are all heavy bronze castings with relief-moulded ornament of varying degrees of complexity but all following a common pattern

¹ Bourray, Powell, *op. cit.*, pl. 68; Tarbes and Garanières, Varagnac *et al.*, *op. cit.*, Sculpture, pls. 2-5, 61, and col. pl. opp. p. 65; Charterhouse, Leeds, *Celtic Ornament* (1933), fig. 29b; Marlborough, *Antiquity*, v (1931), pl. 11 opp. p. 42; cf. also Rynkeby and Sophienborgin, Denmark: Klindt-Jensen, *op. cit.*, figs. 68a, 69a.

² The type was first defined by J. A. Smith in *Proc. Soc. Ant. Scot.* xv (1880-81), 316. Anderson, *op. cit.*, pp. 141-55, figs. 115-35, describes and illustrates the following armlets of this type: Aboyne, Aberdeenshire (two); Auchendadie, Alvah, Banffshire; Bunrannoch, Perthshire (probably); Castle

Newe, Strathdon, Aberdeenshire (two); Drumside, Belhelvie, Aberdeenshire; Pitkelloney, Muthill, Perthshire (two); Seafeld, Kinghorn, Fife; Stanhope, Stobo, Peeblesshire; and a single North Irish find from Newry, Co. Down. The unlocated armlet illustrated by Anderson, fig. 126, can be identified with that from Stichill, Roxburghshire, illustrated in Pococke, *Tour in Scotland 1760* (Scottish History Soc. 1887), p. 331, and there is an unpublished armlet of this type from Achavrail, Rogart, Sutherland, in the Duke of Sutherland's Museum at Dunrobin.

and executed in a consistent style. The armlet type is penannular, consisting of a broad triple-ribbed band which at its terminals expands into the form of loops with an open centre which, at Castle Newe and in the comparable pair from Pitkelloney, Perthshire, still retain enamelled plates with geometric patterns in red and yellow enamel. Some other armlets in the series show traces of the attachment of such plates, now missing; others seem never to have had a filling to the circular openings in the 'loops'. The triple ribs have high-relief mouldings based on the trumpet-and-lentoid boss motif, arranged to suggest a bold conventionalization of a twisted bar, and in the more elaborate examples additional mouldings surround the opening in the 'loops'. The mouldings round these openings in the fine armlet from The Mains of Auchenbadie, only some ten miles east of Deskford in the same county, are treated exactly in the same manner as those round the eyes of the boar's head, and although stylistically the ornament on the armlet as a whole (as in all the series) is more eccentric and baroque than in the handling of the mouldings on the Deskford head, the tradition is nevertheless closely akin to that which produced the latter piece (pl. xb, c). We may then straight away see our boar's head as the product of a local, north-east Scottish, school of fine metal-working, closely related and probably ancestral to that which made the Castle Newe type of armlet in the same region.

Fortunately the dating of these armlets does not have to rest wholly on stylistic considerations. The Castle Newe pair were found in earth at the entrance of an 'earth-house', and a denarius of Nerva (A.D. 96-98) was shortly after found in the same soil close to the original find-spot. This is not a very good association, but it fits with the other evidence for 'earth-houses' or souterrains in eastern Scotland, being in part at least within the second century A.D., with a likelihood that they began earlier (and indeed, continuing in use later!).² But the second association for a Castle Newe type armlet is more secure, for it provides evidence of date from two directions. A small hoard from Stanhope, Stobo, Peeblesshire, found in the last century, comprised an armlet of the type under discussion, a Roman bronze patera, and two ornaments for the cheek-pieces of a bit. The association is undoubted and can be used with confidence.²

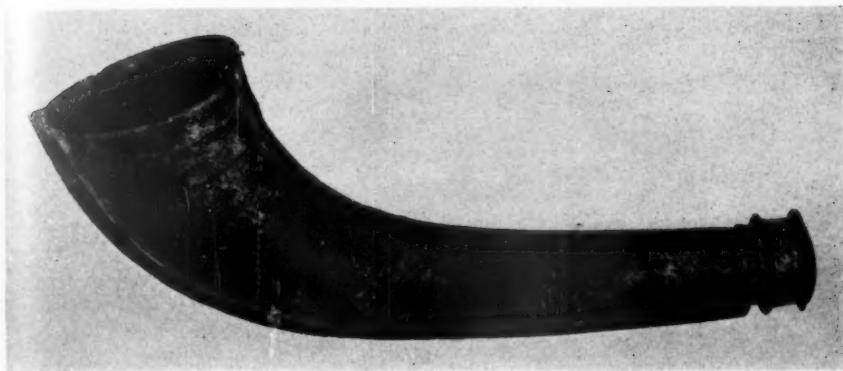
The patera is one of a series of such finds in Scotland which belong to the second century and are presumably in the main Antonine.³ The bit side-pieces are curious representatives of the final stage in the degeneration of the La Tène three-link horse-bit, in which the rings cease to be functionally attached to the mouthpiece, but have loops to attach them to a strap.⁴ Typologically and also stylistically the nearest parallel to the Stanhope objects is a closely similar side-piece from Corbridge, found in a context certainly not later than Antonine, and

¹ *Proc. Soc. Ant. Scot.* vi (1864-6), 13; *ibid.* xv (1880-1), 330. For the coin, see *ibid.* lii (1917-18), 234, and for the dating of the Scottish souterrains, see *Ant. Journ.* xxxiii (1935), 65; *Antiquity*, xxvii (1953), 219.

² *Proc. Soc. Ant. Scot.* xv (1880-1), 316.

³ *Ibid.* lxii (1927-8), 246.

⁴ Cf. Ward Perkins in *Proc. Prehist. Soc.* v (1939), 183. The boss ornament on the Stanhope pieces is that of Gillam's Type B ('petal-headed') dress-fasteners, in Flavian contexts at Newstead, and generally of the late first to the early second century A.D. (*Roman and Native in North Britain* (1958), pp. 80-81).



a. Fragment of *carynx* tube from Dürna



b. Bronze armlet from Auchenbadie, showing terminals



c. Bronze armlet from Auchenbadie, showing ribs



a. Bronze masks from Stanwick



b. Bronze figure on terret from Aldborough



c. Bronze disc from Ireland

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p. 1

more likely to be Flavian–Trajanic.¹ Such a date, of about A.D. 100, would fit the typological and stylistic sequence of which the side-pieces seem to be the end-product, and the armlets, so closely similar one to another as to suggest a relatively short period of manufacture and popularity, may well span no more than a generation.

There is, however, additional, indirect, evidence for such a date belonging to the end, rather than to the beginning, of the armlet series. The peculiar form of the armlets of Castle Newe type, penannular with looped ends, and ribbed and moulded in such a way as to suggest a skeuomorph of original twisted strands, strongly suggests that their prototypes lie in ring-terminal torcs of gold or bronze such as the superb example in gold from Hoard E of the Snettisham Treasure.² This can be dated, from the Gaulish Atrebatian coin concealed within its terminal, to somewhere between 50 and 25 B.C.; closely comparable, as Mr. Rainbird Clarke pointed out, is the gold torc-terminal from Cairnmuir, Kirkcudbright, Peeblesshire, found associated with Gaulish gold coins of c. 60–50 B.C. This would mean that torcs of this type were in circulation by the middle of the first century B.C. in southern England, but (as Mr. Clarke stresses) probably not before the second half of the century in the north. If this was the case, the assumed prototypes of the Castle Newe type of armlet would have been available in Scotland at the beginning of the Christian era, and the development of the type could have taken place at any time during the first century A.D., even if the two associated finds (Castle Newe and Stanhope) imply a date not far removed from A.D. 100. At all events, the evidence suggests that the armlet type may well have come into fashion in the first century A.D., even though the associated finds are at the beginning of the second.

Stylistically, the Deskford boar's head should come early in the armlet series, or indeed precede the main period of their popularity. The treatment of the eyes, sunk within their heavy, sharply modelled, mouldings, closely resembles that of the stylized human masks from Stanwick (pl. xia), in the metalwork hoard which is likely to date between A.D. 50 and 70,³ and again recalls the eyes of the Aldborough head, dated to just before A.D. 71 by Professor Richmond (pl. xib).⁴ The Deskford style indeed is related in another sense to the Stanwick heads and to a well-known Irish school of bronze-working. The trumpet-and-lentoid junctions of the rather thin mouldings on the Deskford head appear to fit a stage just before that of the exaggerated contrasts of the Irish circular plates (pl. xic),⁵ and the treatment of the symmetrically opposed volutes on these discs is precisely that of the moustaches

¹ Corstopitum Museum, unpublished, from Site XLI (*Arch. Ael.* ix (1913), 262, pl. v), deep in a trial pit (p. 239), and so Flavian–Trajanic. Professor Ian Richmond, in giving me this information, adds: 'the only other possibility is that it got there in A.D. 139 while Antonine levels were being laid out, but I am confident it cannot be later than A.D. 139' (*in litt.* 11th July 1948).

² *Proc. Prehist. Soc.* xx (1954), 27–86.

³ *Proc. Royal Arch. Inst.*, York vol. (1846), p. 10; *Brit. Mus. Early Iron Age Guide* (1925),

pp. 138–42, fig. 158; *Later Prehist. Antiqs. Brit. Isles* (1953), pl. xx, 4; for dating, Wheeler, *Stanwick Fortifications* (1954), *passim*. The British Museum photograph of the masks is reproduced here (pl. xia).

⁴ *Journ. Rom. Studies*, xlv (1954), 49, pl. II, 2. Professor Richmond has kindly allowed me to reproduce his hitherto unpublished photograph of the head here (pl. xib).

⁵ *Later Prehist. Antiqs. Brit. Isles* (1953), pl. xxiii, 2; Piggott and Daniel, *op. cit.*, nos. 48, 49.

on the Stanwick heads (pl. x1a). The discs are stylistically antecedent to the very thin and wiry Irish style seen to perfection on the disc from the river Bann recently studied by Mr. E. M. Jope and Mr. B. C. S. Wilson, and assigned by them to a date in the late first or early second century A.D.¹ These considerations, taken together, make it likely that the Deskford head is the product of one of the North British (perhaps Hiberno-British) schools of metal-working, related products of which are known from Yorkshire, Ireland, and eastern Scotland, and that its likely date is within the first century A.D., and probably near the middle of that century.

The evidence brought together in the present paper implies that the *carnyx* in Early Iron Age Britain is represented not only by the representations on Belgic coins already referred to, discussed by Mr. Derek Allen, but that fragments of two actual specimens survive. The first, that from Tattershall Ferry, has long been recognized for what it is, but a re-examination of the available evidence enables us to see its position in the *carnyx* series rather more clearly, and to suggest a possible date for it in the first half of the first century A.D. The bronze boar's head from Deskford, long a puzzle, seems best explained as another *carnyx* fragment, this time the animal head forming the actual mouthpiece, which is missing in the Tattershall piece. A review of the dating evidence here again suggests a date within the first century A.D., probably towards the middle. Numismatic and archaeological evidence are therefore in agreement in indicating that the panoply of the Celtic warrior in Britain at the time of the Roman Conquest included, as elsewhere in the Celtic world, the war-trumpet in characteristic barbaric animal-headed form.

¹ *Ulster Journ. Arch.* xx (1957), 95-102.

THE EXCAVATION OF AN ENCLOSED HUT-GROUP AT CAE'R-MYNYDD IN CAERNARVONSHIRE*

By W. E. GRIFFITHS, F.S.A.

THE 'enclosed hut-groups', or native homesteads consisting of round or rectangular buildings within an enclosure, of N.W. Wales are well known and have been discussed by Raleigh Radford¹ as well as by Hemp² and myself.³ Caernarvonshire contains many examples of these farmsteads,⁴ but few have been excavated and the problems of their origin, date, and development are still numerous and perplexing. Howel Williams excavated two sites of this type near Rhostryfan in 1921-2,⁵ and these yielded Romano-British pottery and other objects datable to the second to fourth centuries A.D. Two hut-groups at Caerau, near Pant-glas, excavated by O'Neil in 1933-4,⁶ proved to have been occupied during the second and third centuries. This dating is in accord with what is known of similar sites in Anglesey, the best known of these being at Din Lligwy.⁷ On the other hand, a more recently excavated homestead in the island, at Pant-y-saer, has produced evidence of occupation during the earlier part of the dark ages.⁸

In 1949 an enclosed hut-group became available for examination at Cae'r-mynydd, about halfway between Rhiwlas and Deiniolen in Caernarvonshire, and was excavated under my direction in March and April of that year.⁹ I should like to take this opportunity of expressing my thanks to the owner of the land, Sir Michael Duff, for his ready consent to the excavation, and to Squadron-Leaders E. L. Macro and F. A. V. Stoltz of the Royal Air Force who granted access to the site and showed the greatest kindness and help throughout the work. Excavation was resumed in November 1955 by the staff of the Royal Commission on Ancient Monuments in Wales and Monmouthshire; I wish to express my appreciation of the work of my colleagues on this body, and especially the Secretary, Mr. A. H. A. Hogg, M.A., F.S.A.

THE SITE

The hut-group¹⁰ (location maps, fig. 1) is situated 150 yds. S.W. of a house known as Cae'r-mynydd, in the parish of Llanddeiniolen, and about $\frac{3}{4}$ mile S.W. of the village of Rhiwlas; O.S. 1-in. map Sheet 107; 6-in. map Sheet Caerns. XI S.E.; 25-in. map Sheet XI, 16; Nat. Grid ref. SH 57236467. It is not marked on any of the Ordnance Survey maps. It lies at a height of just over 600 ft. above O.D. on ground falling gently to the N.W., at the foot of the steep slopes of Moel

¹ RCAM, *Anglesey Inventory* (1937), pp. lxxiii-lxxiii.

² *Antiquity* (1944), pp. 188-94.

³ *Ibid.* (1951), pp. 179 ff.

⁴ See vol. i of the *Caernarvonshire Inventory* of the RCAM (1956), and the forthcoming vols. ii and iii.

⁵ *Arch. Camb.* (1923), pp. 87-113, 293-7.

⁶ *Ant. Journ.* (1936), pp. 295-320.

⁷ *Arch. Camb.* (1908), pp. 183-210; (1930), pp. 375-93.

⁸ *Ibid.* (1934), pp. 1-36.

⁹ *Ibid.* (1954), pp. 111-13.

¹⁰ RCAM, *Caerns. Inv.* ii, no. 1173.

* Published with the aid of a grant from the Council for British Archaeology.

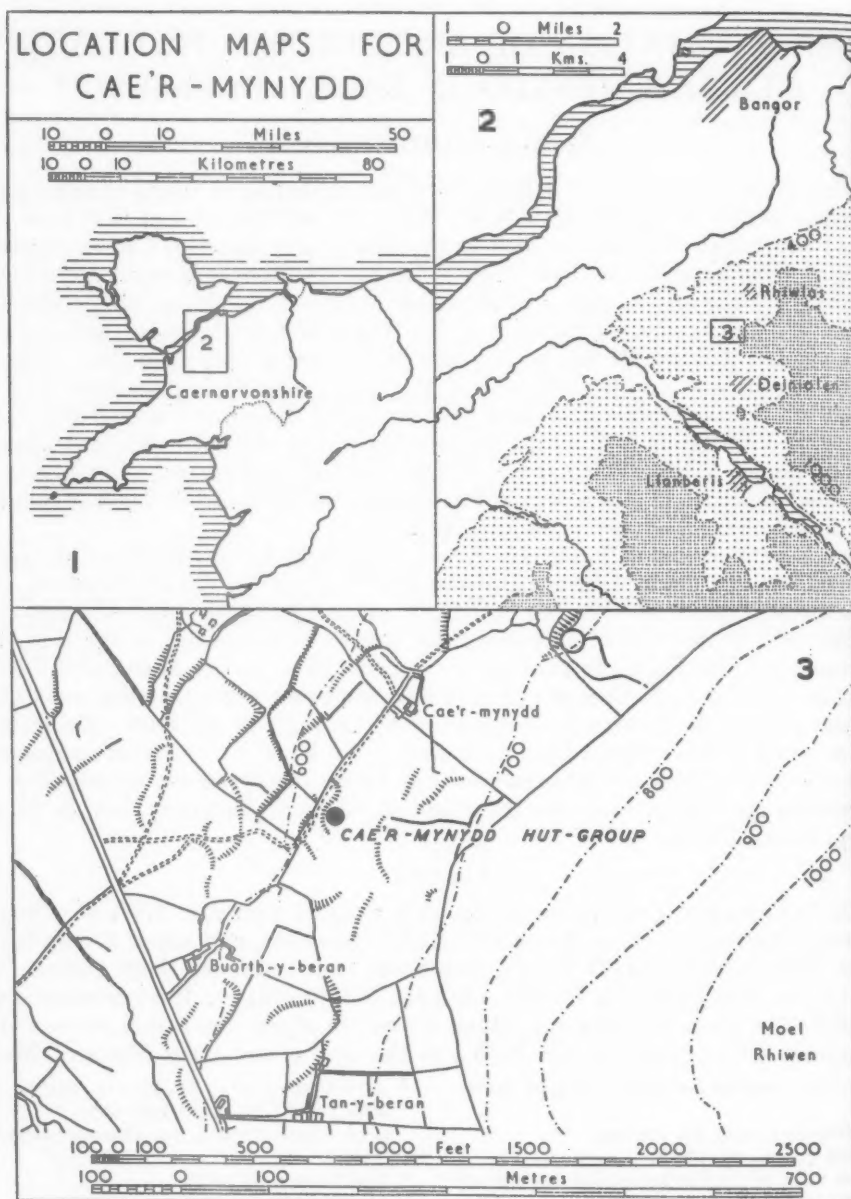


FIG. 1.

(Based on the O.S. maps with the consent of the Controller of H.M. Stationery Office)

Rhiwen (1,282 ft.), and at the lower edge of a former wood known as Coed Cae'r-mynydd, the trees of which were felled during the 1939-45 War. To the N.W. of the site are small fields enclosed by drystone walls, formerly cultivated but now used for grazing. A road skirts the N.W. side of the enclosure and barely clears the outer wall and the outer side of the entrance, which lay at this point. Another road, of recent construction, passes to the S.E. of the site and may have damaged the outer wall and other structures on this side. The hut-group is covered with the stumps of beech trees, most of them in a condition of decay. The hillfort of Caerau Dinas or Dinas Dinorwig forms a prominent landmark $1\frac{1}{2}$ miles to the W.N.W. and the Roman fort of Segontium at Caernarvon lies 6 miles to the W.S.W.

The hut-group (plan, pl. xii) consists of an *oval enclosure* with its longer axis from N.E. to S.W., 110 ft. long and 85 ft. broad, measured from the top of the *main enclosing wall*. The latter is much ruined and presents the appearance of a wide bank of earth and stones reaching a maximum height of 6 ft. on the N.W. and W., but fading out on the upper (S.E.) side, where only an inner slope is preserved, forming a scarp. Traces of an outer wall face of large boulders are visible at intervals round the perimeter, but the only point where an inner face could be seen before excavation was immediately N.E. of the entrance.

An *outer wall* of large boulders laid lengthwise, running more or less parallel to the Main Wall round most if not all of the perimeter, is also visible in places. This lies about 12 ft. out from the outer face of the Main Wall, but unlike the latter seems to consist merely of a single line of large stones and has left no remains of a bank.

The *entrance* lies in the middle of the N.W. side and consists of a passage about 14 ft. long and 8 ft. wide leading through the Main Wall; the corresponding gap through the Outer Wall cannot be seen on the surface and has been partly destroyed by the modern road. The passage is flanked by large boulders in line, and traces of the inner corners of the Entrance, together with a few orthostats that appeared before excavation to be the inner face of the Main Wall to the N.E. (later found to be part of the wall of Hut 4; see plan, pl. xii), suggested that the enclosure wall was broader on either side of the Entrance than elsewhere in its circuit.

The central part of the enclosure forms a *courtyard* falling slightly to the N.W. Four structures were visible in the interior of the hut-group before excavation, three of them situated against the inner face of the Main Wall:

1. Hut 1, at the S.W. end of the enclosure, was a circular depression about 25 ft. in diameter, full of loose boulders. The hut wall was visible as a ruined bank of stones and earth with no clear sign of wall faces. A gap 6 ft. wide on the N. appeared to mark the site of the entrance.
2. Hut 3 was a well-defined circular structure, 22-23 ft. in diameter, to the E. of the courtyard. Its floor lay about 4 ft. higher than that of the courtyard, and its W. side formed a steep scarp. No wall faces were visible, nor was it possible to be sure of the position of the entrance.
3. The remains of what appeared to be a large rectangular building (Hut 2), approximately 37 ft. long from N.E. to S.W. by 20 ft. wide, lay between

Huts 1 and 3 on the S.E. side of the enclosure. The S.E. wall of this building appeared to be provided by the Main Wall of the enclosure. The floor lay 2 ft. higher than the Courtyard; the entrance was not visible, but it was obvious that it must lie somewhere in the N.W. wall.

4. A straight line of boulders was traceable from a point near the N.W. side of Hut 3 in a westerly direction for a distance of 20 ft. That part of the Courtyard which lay to the N. of it was at a slightly higher level than the portion to the S. of it.

Fourteen yards E. of the outer face of the Main Wall on the E. is a single large circular hut (not shown on the plan, pl. xii), averaging 30 ft. in internal diameter. This forms a level area against rising ground to the S.E. The hut wall is well built and in better preservation than any of the structures in the hut-group; it reaches a maximum height of 2 ft. and averages 4 ft. in width, but is broadened to 6 ft. on either side of the entrance which lies on the N.W. and is 5 ft. wide. The wall is faced on both sides with large slabs laid lengthwise, between which is a core of earth and small stones. This hut is now detached from the hut-group, but may originally have been connected to it by a length of walling (see below, p. 37).

The gentle slopes to the N., W., and S. of the hut-group are covered by an extensive series of *ancient lynched fields*. Some of these are shown on fig. 1. The lynchets are strongly marked and stand in places as much as 5 ft. high. The fields are cleared of stones, and the tops of the lynchets are sometimes lined with the products of this clearance, though in many cases the same line is followed by dry-built walls of comparatively recent date. The lynchets run more or less horizontally across the slope, but the fields are of irregular shape and their layout appears to have been dictated by the vagaries of the topography. Lines of old walling and terraces are also visible on the steeper, and less extensively cleared, slopes to the E. of the homestead, but some of the terraces may be natural.

Lynched fields of the kind described extend over a considerable area to the N. and S. of the hut-group between the 500 and 800 ft. contours. It is unlikely that they all belonged to the Cae'r-mynydd farmstead since a number of other hut-groups of similar character are present in the area. These are:

- (i) A roughly circular enclosure containing round huts, S. of Coed Castell, and 750 yds. N.W. of the Cae'r-mynydd site (RCAM, *Caerns. Inv.* ii, no. 1174).
- (ii) A circular enclosure containing round huts and a rectangular building, N. of Coed Rhiwlas, and 1,000 yds. N.N.E. of Cae'r-mynydd (*ibid.*, no. 1175).
- (iii) A badly damaged hut-group, S.E. of Cae-cerig, and 500 yds. S. of Cae'r-mynydd (*ibid.*, no. 1176).
- (iv) A circular enclosure, probably originally a hut-group, 350 yds. N.E. of Cae'r-mynydd (*ibid.*, no. 1177).

It would appear, therefore, that the whole complex of lynched fields represents the farm-land belonging to at least five homesteads (assuming all to be contemporary).¹ But there are no clear boundaries between the various farms, and moreover

¹ See p. 38 below for a discussion of the possibility that some at least of the fields may pre-date the Cae'r-mynydd hut-group.

the presence of detached rectangular buildings or 'long huts' in the same area¹ is evidence of the re-use of the land in medieval times, so that not all the fields may be of early date. For these reasons it is impossible to estimate how much land was farmed by the inhabitants of each individual hut-group.

A sketch-plan of the Cae'r-mynydd homestead was published by the Rev. Elias Owen, a local antiquary of some note, about ninety years ago.² This represents features no longer visible. The Main and Outer Walls are connected at three points by short lengths of wall crossing the intervening space. Inside the enclosure, in addition to the rectangular building are seven round huts; one of these, on the N., is very large, and two others are joined together to form a two-roomed dwelling with a single entrance. The detached hut to the S.E. is connected to the enclosure by a length of walling; and another wall runs S.W. from the western side of the enclosure and appears to have several branches which may have enclosed a rectangular structure. Apart from the detached circular hut, there is now no trace of these extra-mural structures; and as excavation proved the internal details of Owen's plan to be wrong at several points, it is clear that it must be regarded with suspicion. Indeed, if used uncritically it could be positively misleading (see below, p. 60).

EXCAVATION

A trial pit sunk outside the enclosure on the N.E. side disclosed the following sequence of soils:

- (a) Surface down to 10 in. Turf, below which was dark brown humus soil. At a depth of 6 in. the soil became a lighter brown and was rather gravelly.
- (b) 10 in. to 1 ft. 4 in. A yellow friable loam containing a few small stones and a very few large ones. This extended deeper in pockets.
- (c) At an average depth of 1 ft. 4 in. lay a hard grey boulder-clay subsoil in which were embedded many small stones.

The scarcity of stones in layer (b), and comparison with the stratification revealed in the cuttings near the Entrance and in the upper end of Trench K, suggested that this layer may represent old plough-soil (but see below, p. 39).

The excavation of the hut-group itself proved to be difficult on account of the ruinous condition of the stone walls and the large numbers of tree roots. Most of the tree stumps were rotten but some remained tough and were extremely difficult to deal with—not to mention the havoc which their roots had wrought to the stone wall faces and paved floors.

In 1949 the Main and Outer Walls, and the space between them, were examined S.W. of the Entrance; also the S.W. side of the Entrance itself. The interior of Hut 1 was excavated, and a trial cut was made along the N.W. and N.E. walls of Hut 2 and the outer face of the adjoining Hut 3. In 1955 the other side of the Entrance was examined, and the inner side of the Main Wall was followed to the N.E., disclosing Hut 4 (which was excavated) and the features to the N.E. of it shown at M on pl. XII. The excavation of Hut 1 was completed; the S.W. half of

¹ RCAM, *Caerns. Inv.* ii, nos. 1190-2.

² *Arch. Camb.* (1866), opp. p. 216; see also p. 226.

Hut 2, and its entrance, were cleared, and the wall faces of this hut were traced through their entire course. The S. half of Hut 3, and its entrance, were excavated. In addition, Trench J was cut along the long axis of the hut-group, and Trench K across its breadth. A trial pit (L on pl. xii) was sunk to examine the area between Huts 1 and 2. An attempt was made to trace the further course of the wall crossing the courtyard at its W. end.

THE MAIN AND OUTER WALLS, AND THE ENTRANCE

In 1949 an area was cleared extending from the S.W. side of the Entrance for about 20 ft. to the S.W. and embracing both Main and Outer Walls. Owing to difficulties with tree stumps, however, part of the Main Wall, and a patch between the two walls, were not excavated.

The *Main Wall* of the enclosure was badly ruined and robbed of stones. The line of its outer face, consisting of fairly large undressed local boulders, was, however, established. For the most part only the foundation course survived, though here and there a few stones remained in position on top of this. It was not therefore possible to measure the original height of the wall; nor could this be estimated from the amount of fallen stone (see below, p. 40) since nothing is known of the extent of stone robbing.

The boulders of the outer face had been laid immediately on the old surface without a foundation trench. This will be evident from a glance at the section (A-B in fig. 2), which revealed a number of significant facts. In the area between the Main and Outer Walls the subsoil, a hard grey clay (layer 5), was capped by a thin and ill-defined layer of gravelly grey clay (layer 3). Above this was brown humus soil (layer 2), free from stones, becoming darker and stony towards the surface (layer 1). At the inner side of the Main Wall, the topmost layer of humus soil (layer 1) was succeeded by a well-defined grey band (layer 3), beneath which lay a compact orange clay (layer 4).

The foundation stones of both wall faces lay on the grey soil (layer 3), which apparently represents the old surface, though it was not confined to the area covered by the wall. Though more or less level in the neighbourhood of the Outer Wall, this layer rose rapidly towards the outer face of the Main Wall, flattening out again as the inner face was approached. The Main Wall had therefore been erected on a pre-existing terrace. No corresponding rise, however, was traced in the subsoil (layer 5), its place being taken behind and beneath the Main Wall by the orange-coloured clay (layer 4). This suggested that the terrace was not a natural feature and that layer 4 represents the accumulation of tilled earth at the edge of a lynchet. It therefore seemed reasonable to believe that the main enclosing wall of the hut-group, along the N.W. and N., was erected on the edge of an earlier cultivated field. The terrace can in fact be traced both to the N.E. and S.W. of the homestead. To the N.E. it is visible as a slight rise in the modern road; to the S.W. it runs parallel with the road before swinging away to the S. and fading out.

The artificial origin of the orange-coloured layer of soil had seemed satisfactorily established by the excavations of 1949. Doubts began to assail me when we opened

the upper end of Trench K (see pl. xii, and section c-d, fig. 2) in 1955. Here the relative levels of the two walls were reversed. The outer face of the Main Wall was bedded on the grey subsoil (layer 3). Outside the face the subsoil was capped by the same bright orange soil (layer 2), which ended at the face and did not extend

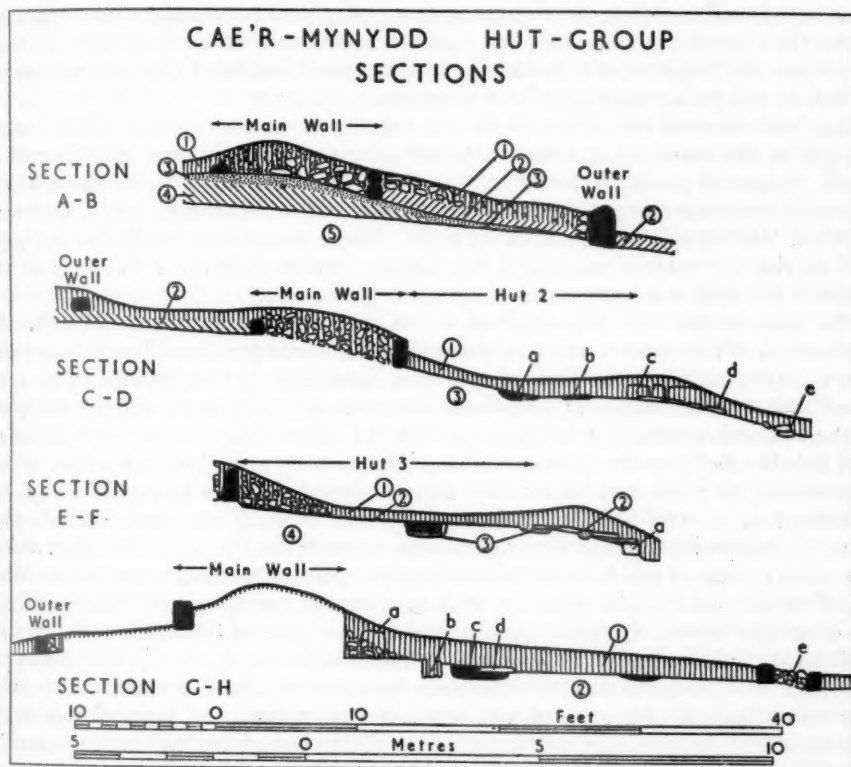


FIG. 2.

under the wall. But the Outer Wall, which along the line A-B had rested on the grey subsoil, here lay at a high level on top of the orange layer. This could only mean that the orange soil had accumulated after the erection of the Main Wall but before the building of the Outer Wall (for the relative age of the two walls, see further below, p. 41). I suppose it would be possible to argue that this accumulation represents the continued ploughing of the field in one corner of which the hut-group had been built. But it might also be the result of natural soil creep, arrested by the Main Wall. In that case the earlier terrace, revealed in the section A-B, could equally well be the result of natural soil movement, though there was no sign of the barrier that had halted this movement and caused the formation of the terrace.

All we can say with certainty is that at A-B the process, whether due to natural causes or to tillage, pre-dates the hut-group, while at C-D it post-dates it (see p. 57 below for a further discussion of this topic).

In front of the Main Wall at A-B lay a tumbled mass of stones similar in size to those in the wall face. These lay not on the old surface (layer 3) but at a high level in the humus soil above it. They cannot, therefore, have been a buttress or packing against the outer face of the wall, but represented material fallen from the wall face, and indeed the height at which they lay in the topsoil indicated that the collapse of the wall at this point must have been comparatively recent.

The inner face of the Main Wall was not found with certainty. The damage wrought by the roots of a tree had so disturbed the face that its line could barely be traced. It seemed probable, however, that three stones in line, in the S. corner of the excavated area, represented the last remains of the foundation course; if this be so, the Main Wall at this point was 12 ft. wide. These stones were laid, like the outer face, on the old surface without a foundation trench. On the S.W. side of the Entrance the wall was broadened slightly, to 13 ft. 6 in.

The core of the wall consisted of a compact mass of stones and earth. An examination of the stony portion of this mixture showed that boulders of large size were confined to the outer half of the core, immediately behind the outer face. There were no indications of post-holes beneath, or in the body of, the rampart. On the available evidence it would seem that the Main Wall was massive but of no great height, the quantity of material required to carry a wall of this width to any height being too great, and its situation on the edge of a terrace being too dangerous to attempt it. A well-built outer face of drystone walling was first erected; then against its inner side masses of boulders were heaped; finally earth and small stones were piled on top of and behind this structure to form a massive ramp, at the inner foot of which was a slight retaining wall represented by the scanty traces of inner face described above. Corroboration of the slight nature of the inner wall face was obtained at the N.E. end of Trench J (pl. XII, and section G-H, fig. 2). On the upper side of the hut-group, in contrast, the inner face was well built, because at this point it served as the wall of Hut 2 (pl. XII, and section C-D, fig. 2). Taken all round, the evidence combined to suggest that the Main Wall, though perhaps surmounted by a wooden fence or entanglement of thorn bushes, was hardly defensive in character, and it may be presumed its main purpose was to keep out wild animals and straying domestic cattle.

The *Outer Wall*, on the line A-B, lay 16 ft. from the outer face of the Main Wall; but as it approached the Entrance it converged towards the Main Wall and at the Entrance itself swung inwards to abut against it. The wall consisted of an outer face in the form of a single line of large boulders, behind which lay a narrow packing of earth and a roughly built inner face of much smaller stones piled loosely upon each other. The wall was 2 ft. 6 in. thick but increased in width, after turning in at the Entrance, to 4 ft. 6 in. The absence of a bank of earth indicated that the wall can never have been anything but slight in character; even allowing for extensive stone-robbing, the foundations that remained cannot have supported a drystone wall of any great height. The large stones of the outer face were sunk into a shallow

channel in the clay subsoil; the loose stones of the inner face were merely piled on top of the old surface.

At the outer corner where the wall turned in towards the Main Wall, a gap occurred in the facing stones. Outside the gap a number of large boulders lay strewn irregularly in the soil, and it was clear that at some time the outer corner of the wall had collapsed outwards. In the short stretch (some 8 ft.) after the turn, the inner face of the wall was more carefully built, of medium-sized stones. The most interesting feature revealed by excavation was the junction of the Main and Outer Walls; these were not of one build, the Outer Wall abutting against the face of the Main Wall with a very clear, straight joint. The Outer Wall is therefore an addition to the original plan of the hut-group, though at this point there was nothing to indicate how much later it was in date than the Main Wall. At the upper end of Trench K, at c, the depth of the orange layer on which the Outer Wall rested suggested a not inconsiderable lapse of time between the erection of the two walls.

The Outer Wall was examined at one or two other points. At the extreme N.E. end of the homestead (G on the plan, pl. xii; and section G-H, fig. 2) it was found to be only 9 ft. from the outer face of the Main Wall. At c (extreme upper end of Trench K) the distance between the two walls was 12 ft., and here the Outer Wall, reduced to a single line of boulders, lay at a comparatively high level in the soil as remarked above. In general, the wall was fairly well preserved around the W., S., and S.E. parts of the perimeter. Elsewhere it was in poor shape; a cutting made N.E. of the Entrance (N on pl. xii) suggested it lay here no more than 4 ft. out from the Main Wall, but along the whole stretch north-eastwards from the Entrance as far as G its course was far from certain, and it seems likely that in this quadrant it had been extensively robbed to build a modern wall on the opposite side of the road.

The Entrance was disappointing, from an excavator's point of view. The ends of the Main Wall, flanking the gateway, had been very heavily robbed. No post-holes were found. The Entrance consisted of a corridor with a total length of 22 ft. and a minimum width of 7 ft. 6 in. between the ends of the Main Wall and the inturned section of the Outer Wall. One feature of interest was noticed. Gaps in the facing stones that flanked the passageway and formed the ends of the Main Wall disclosed the make-up of the rampart at this point. Beneath a thin layer of humus soil and leaf mould was a bright orange loam exactly similar to layer 4 in the section A-B. This was proof that the terrace or lynchet on which the Main Wall was built continued to the N.E. of the Entrance (indeed, as already noted, it was visible a little further on as a rise in the modern road), and that the Entrance itself had been cut through the terrace so as to provide a graded roadway without an awkward rise.

Very few small finds were brought to light in the Entrance, the excavated area between it and A-B, and the cuttings at G and c. The space between the two walls in the neighbourhood of A-B yielded a few small fragments of charcoal and broken pieces of pot-boilers. From the Entrance came a large iron nail.

HUT 1

Hut 1 was a circular dwelling at the S.W. end of the enclosure. It was really slightly oval, its internal diameter varying from 22 ft. N.-S. to about 20 ft. E.-W.

The kink shown in the inner face on the W. (see plan, pl. xii) was due to the inward movement of the facing stones, as explained in detail below. On the W. and S.W. the wall of the hut was formed by the Main Wall of the enclosure, which here contracted to a minimum width of 8 ft., so that we can regard the hut as being not only built against the Main Wall but actually to some extent set into it. On the S. and S.E. the distance between the inner face of the hut and the outer face of the Main Wall increased rapidly and a vast bank of stones and earth filled the space between Huts 1 and 2. This rose to a considerable height above Hut 1, and indeed by the time we had reached the lowest level in the hut, it towered some 8 ft. above us.

On the N. and E., facing the Courtyard, the hut was bounded by a wall some 2 ft. high and 7 ft. thick, increasing to 8 ft. 6 in. at the entrance, which lay on the N. This wall was faced on both sides with large slabs and orthostats, which were very massive on the outer side facing the Courtyard. On the E., tree roots had caused great havoc and the wall was badly ruined. Such a wall is unlikely to have been carried to any great height, since its ruin—even allowing for the removal of facing stones for the construction of field walls in modern times—would have resulted in immense quantities of fallen material. Though a good deal of fallen stone littered the interior of the hut, it was not nearly enough to allow the theoretical reconstruction of a high wall; indeed, the loose, unvegetated condition of the upper layers of the stony litter suggested that much of it had been brought from elsewhere and dumped in the hut at a comparatively recent date.

The inner face of the Main Wall, forming the western side of the hut, was of very different construction from the wall on the N. and E. It was composed of drystone walling consisting of a base course of large boulders, so placed that they presented a smooth surface towards the centre of the hut, above which were smaller slabs and blocks, sometimes in rough courses (pl. xiiiA).¹ It was preserved to a maximum height of 2 ft. On the W. the face leaned inwards appreciably, and the courses of stones oversailed one another so regularly that at first I thought they represented the springing of a corbelled vault. The paving of the hut floor (see below) had, moreover, been smashed in places as if by the impact of stones fallen from a great height. But the size of the hut made it difficult to envisage a corbelled roof, and it became clear on observing the inward tilt of the wall stones at other points on the circumference, so precariously balanced that a touch was sufficient to bring them tumbling down, that the overhang had been produced by the disruptive action of tree roots. Indeed, as the wall face was followed towards the S., a section was reached where the courses of stones had collapsed on to the hut floor with scarcely any displacement from their relative positions.

The entrance, on the N., was of uncertain width. Its E. side was well preserved in the form of a row of upright slabs, 8 ft. 6 in. long (though the outer corner-stone was missing). The W. side was almost completely destroyed; two large slabs lying prone, distant 5 ft. from the E. side, had probably fallen from an upright position.

¹ The employment of orthostatic and coursed walling in the same hut should dispel the belief that the two types of construction are chronologically distinct. The same mingling of techniques was ob-

served in an Iron Age hut in the Conway Mountain hillfort (*Arch. Camb.* (1956), p. 52, Hut 1; RCAM, *Caerns. Inv.* i, pl. 2).

Between them was a suggestion of a post-hole, though there was nothing to correspond with it on the opposite side of the entrance.

The feature which gave the excavation of Hut 1 a greater importance than any of the other investigations carried out in the hut-group was the establishment of three distinct periods of occupation. The evidence for these will now be described in the order in which they were brought to light.

Period III. In the latest period the floor of the hut was roughly paved with large irregularly shaped blocks of stone, many broken and displaced as though by the impact of falling masonry. This is more likely to have been due to rubble thrown into the hut than to the collapse of a vaulted dome; probably, too, it was caused in part by frost action. The paving was absent in several places, particularly on the S.E. and again on the S., where its place was taken by a level floor of yellow clay containing many hearths. This feature certainly originated in Period II and is accordingly described below (p. 44), though the fact that the paving was not thrown over it suggests it was retained in use. The paving was most complete in the neighbourhood of the entrance, and the entrance passage itself was neatly paved with slabs, the paving beginning at the inner end of the doorway on the same level as the floor of the hut, and sloping gently downwards towards the outside. This was necessary because the hut floor lay at a higher level than the Courtyard. The sloping slabs of the entrance were also no doubt intended to facilitate the drainage of water from the porch.

Further evidence for drainage arrangements within the hut was provided by the discovery, on the E. side of the building, of a narrow drain at the foot of the inner face of the wall. The paving slabs ended some 9 in. short of the E. inner corner-stone of the entrance, and this gap, filled with soft, dark earth, was traced for a considerable distance to the S.E. along the foot of the wall, becoming progressively less distinct until it was lost amid a welter of fallen stones on the S.E. side of the hut. This drain doubtless emptied under the slabs of the entrance, though no satisfactory culvert was found. No such arrangement existed on the western side of the hut, where the paving slabs were carried right up to the wall face. The flat-topped stone marked *x* on the plan (pl. XII), at first thought to be a paving slab, was later found to be a very large boulder embedded in the subsoil (pl. XIII).

Above the paved floor of Period III lay black humus soil containing a great quantity of fallen (and probably dumped) stones. The upper layers of these were almost entirely free from soil and vegetation, and the dumping appeared to be comparatively recent. The soil immediately in contact with the paving stones contained a few small fragments of charcoal and burnt clay, and a patch of charcoal and burnt wood near the centre of the hut showed where a fire had been burning. Some of the fragments retained an unburnt core, and the general impression was that the hearth was of recent date.

The only finds were two large fragments of a Roman amphora (group 8, p. 57), similar to other pieces found lying on the surface of the Courtyard. These were discovered at a high level in the stony filling, and had probably been brought into the hut with the dumped material.

Period II. Beneath the paved floor of Period III were evident signs of an earlier

occupation. There was, however, no major structural difference in the hut itself. When the Period III paving was removed, it was discovered that a segment of the flooring, along the W. wall, was in fact a stone bench belonging to an earlier occupation. This bench, which was about 9 in. high, cut off a chord of the hut-circle about 19 ft. long and 3 ft. 6 in. wide at its broadest part. It had been incorporated in the paving of Period III in such a way that its upper surface was flush with that paving. Stone benches of this kind are often found in round huts in Wales as elsewhere; their purpose is uncertain, but heaped with bracken or straw they could doubtless be used as beds or seats. The S. end of the bench had a curious offset that reduced its effective length to 17 ft., the purpose of this being apparently to allow more room for a great bank of clay on which lay the hearth.

This mass of firm yellow clay occupied an area about 12 ft. long and 6 ft. wide against the S. wall of the hut. Its upper surface was flush with the paved floor of Period III, and it was at first thought to be merely an unpaved part of the Period III floor. The surface bore extensive traces of burning in the form of four or more hearths—roughly circular patches of blackened earth, charcoal, stones burnt red and shattered by heat, and fragments of brick-red clay. The hearths were 2–3 ft. in diameter and doubtless represent the shifting about of a single fireplace during a long occupation; some were merely patches of burnt material 2 or 3 in. thick, but one hearth (or ? furnace), near the recessed end of the bench described above, was a circular pit 8 in. deep, lined with small stones embedded in the clay. Presumably the hearths continued in use in Period III, since they were not overlain by an unburnt occupation layer, nor could we discover a Period III fireplace anywhere else in the hut; but constructional details and the small finds from the hearths combined to place this great hearth-platform in Period II.

The yellow clay of which the platform was constructed was packed closely against the stone bench—even appearing to some extent between the joints of the stonework. This could only mean that the platform was a mass of clay deposited and rammed firmly into place after the stone bench (with its S. end truncated, to allow more room for the platform) had been built. If this were so, the inner face of the hut wall on the S. should not be built on top of the clay bank but be carried down behind it; further excavation proved that this was so, and here again it was discovered that the yellow clay was rammed firmly against the stones of the wall face. The wall above this level was greatly smoke-blackened and burnt red, but nothing resembling a chimney or any kind of opening to allow for the escape of smoke was found in the walling that survived.

From the hearths came iron nails and other iron objects, a droplet of copper, pieces of calcined bone, and many sherds of pottery of groups 2a, 3, 4a–c, and 6 (see below, p. 53), contemporary with those from the remainder of the Period II floor. There can therefore be little doubt that this raised hearth-platform was a feature of Period II. The employment of a raised bank, the intensity of burning, the form of one of the hearths, and the discovery of metallic copper, suggest that smelting, or at any rate metal-working, was carried on here.¹

¹ The hearth-platform recalls the 'smithy-forge' excavated by Howel Williams (*Arch. Camb.* (1923), pp. 295–7), in the hut-group at Coed-y-brain, near Rhostryfan,

The remainder of the Period II floor lay about 1 ft. below that of Period III and was separated from the latter by dark soil containing abundant relics of occupation. Much of the E. and N. part of the floor consisted of a good pavement of large thin slabs. The entrance, however, was not paved, in contrast to Period III. Near the centre of the hut was a single post-hole (PII on pl. xii), the only one that was assigned with any confidence to Period II since the occupation layer did not overlie it. Though placed somewhat eccentrically (9 ft. from the E. and 11 ft. from the W. wall), it may indicate that the hut roof was of wigwam type supported on a single central upright. The flagstones of the floor were absent from an area adjoining the hut wall on the S.E. Here their place was taken by a very hard grey clay full of fragments of grit, evidently the subsoil. In this, about 3 ft. 6 in. from the E. wall, was an oval pit measuring 2 ft. by 1 ft., and 1 ft. 6 in. deep, neatly scooped in the firm clay. This, presumably a storage pit of some kind (perhaps holding water into which were plunged the heated irons from the adjacent hearth-platform), yielded fragments of group 4*b* pottery.

Below the Period III flagstones was found a layer of dark greasy soil (*x*), averaging 4 in. in thickness, full of bits of charcoal and burnt clay. At one or two points there were traces of two layers of black soil (*x*₁ and *x*₂) separated by a thin band of clean brown soil (*y*) yielding no occupation material. Below these layers was a stratum of brown loamy soil (*z*) full of angular fragments of stone and flakes of stone burnt and split by the action of fire; this had a maximum thickness of 8 in. All these layers, with the exception of the sterile band (*y*), yielded many fragments of pottery of groups 2*a*, 3, 4*a-c*, and 6; and from layer (*z*) came the sherds comprising group 5.

Hut 1 accordingly yielded evidence of a prolonged occupation in Period II. This, though perhaps not continuous, was homogeneous in character, since the same kind of pottery was found in all the occupation layers—sherds of group 4*a*, for example, being found not only in layer (*z*) but also immediately underneath the paving of Period III.

Period I. When the hearth-platform of Period II was being cleared, we came across what at first I took to be a retaining wall along its foot. This was a single line of stones commencing at a point on the S.E. wall of the hut and running towards the W. along a curve concave towards the N.E. (pl. xiii*c*). This concavity, and the regularity of the curve, puzzled me until it was found that the line continued beyond the end of the hearth-platform and followed the same even curve as far as the S.W. corner of the entrance. We had discovered something that had nothing to do with the hearth-platform, and in fact, as subsequent excavation was to show, had nothing to do with Period II at all. This line of stones belonged to an even earlier period. In the N.W. part of the hut it lay immediately under the paving stones of Period II. For the most part it consisted of a single course of medium-sized stones, though in places remains of a second course survived. The stones were mostly placed so as to present a smooth face towards the N.E. They rested on a thin layer of clean brown soil, possibly representing the old topsoil, since below it the untouched subsoil was again found. But the ancient surface must have been uneven since on the S.E. the subsoil appeared at a higher level, and here the stones rested

directly on it and were even to some extent trenched into it. There was no sign of a wall core behind (i.e. to the S.W. of) the line of stones, nor of a corresponding wall face still farther to the S.W.; in fact, they were backed by untouched subsoil and it was clear that they represented a revetment wall along the base of a slope.

The wall was fronted on the N.E., along its whole course across the hut, by a shallow drain or gully, 1 ft. 6 in. to 2 ft. wide, expanding and deepening, a little S.E. of the centre of the hut, into an oval pit 3 ft. by 2 ft. When the Period II paving was removed, further pits and post-holes (PI on pl. xii) came to light within the area bounded by the curving revetment wall: two near the single post-hole of Period II, three close together about halfway between the latter and the S.E. corner of the entrance, and two near the hut wall on the E. Against the hut wall on the N.E. two large depressions merged into one another; they contained small hearths or burnt patches at the bottom, and it was clear that they extended under the hut wall.

The stone-built hut had clearly been erected in Period II. The remains of Period I implied a major structural change, and the possibility at once presented itself that a circular hut had formerly existed with a different centre from that of Period II. From the curve of the revetment wall it was estimated that this hut would have had an internal diameter of 28 ft. and that its centre would have been 12 ft. N.E. of that of the Period II hut. Excavations were accordingly carried out to see if this Period I dwelling could be traced under the wall of the existing hut. On the S.E. it was not possible to follow the Period I wall very far because of the enormous amount of overburden, but enough was excavated to show that both the revetment wall and its fronting drain did in fact continue under the wall of the Period II hut. On the N. the ground was less encumbered, and a section of the Period II hut wall was cleared away, leaving only the side stones of the entrance standing. The large pit on the N.E. was traced for a further 4 ft. under the wall, without reaching its termination; it was backed on the S.E. by a large upright slab set at right angles to the line of the Period II wall. One other post-hole was found in the cleared area, near the side stones of the entrance, as well as a small pit a little to the N.E. The revetment wall, however, was not found, neither under the entrance (from which it had obviously been cleared by the Period II builders), nor under the hut wall. But its fronting drain was traced, and to our surprise now abandoned its curving course and ran more or less straight towards the N.N.E. for 15 ft. and indeed probably farther, but excavation was discontinued at that point.

It now became necessary to search for traces of this Period I building outside the area of the Period II hut. A cutting made on the E., in the angle between Huts 1 and 2, disclosed the drain issuing from under the stones of the Period II wall and running N.N.E. for at least 6 ft. in a straight line, parallel with the drain found under the entrance. Traces of an occupation layer also appeared in Trench J, just outside the N.E. wall of Hut 1, and an enlargement of the trench here disclosed a post-hole, probably belonging to the same series as those (of Period I) found within Hut 1, and a small burnt patch. No remains of walling were found in the trench.

Apart from charcoal, the Period I area within Hut 1 yielded no small finds of any kind. The occupation layer in Trench J produced a piece of (?) Samian ware (group 1, p. 53) and a small fragment of black ware of group 6.

The fragmentary nature of the structural remains of Period I, and the paucity of finds, indicate an extensive clearance by the builders of Period II. In spite of this, it is possible to reconstruct the Period I dwelling as a circular hut about 28 ft. in diameter, with a revetment wall on the S. and S.W., where a drain followed the wall along the base of the slope. On the N.E., where the slope ended, both ends of the drain discharged straight under the hut wall. The roof was supported by a circle of posts concentric with the hut wall, spaced at intervals of from 6 to 9 ft., and lying some 4-5 ft. from the wall. Such an arrangement is consistent both with the observed post-holes and with the larger diameter of the hut (compared with 20-22 ft. for Period II). Alternatively the remains belonged to an oblong hut aligned N.E.-S.W., with apsidal S.W. end, but this seems less likely; no remains of walling or of drainage gullies were found in Trench K (see pl. xii).

HUT 2

Hut 2 (plan, pl. xii; and section c-d, fig. 2) was a rectangular building on the S.E. side of the Courtyard. Its S.E. wall was formed by the Main Wall of the enclosure, here 9-11 ft. thick; its N.E. wall was common to Huts 2 and 3 and had a minimum width of 10 ft. 6 in.; and its S.W. wall was a revetment against the great bank of stones and earth between Huts 1 and 2. The N.W. wall, facing the Courtyard, was 6 ft. 6 in. to 7 ft. 6 in. thick; its outer face consisted of a single course of very large slabs, up to 3 ft. long and 1 ft. 6 in. thick and reaching a maximum height of 3 ft. above the yellow clay on which they rested. Very few fallen stones lay in front of the wall, and those unearthened were not nearly as large as the slabs that remained *in situ*. The core of the wall consisted of a packed mass of small angular stones.

The inner face of the hut wall was traced throughout its entire circuit. On the N.W. it consisted of slabs, smaller than the blocks of the outer face but equally well laid; but everywhere else it was of neat drystone walling some 2 ft. high. The S.E. wall bulged inwards but it was not possible to tell if this were intentional or due to the pressure of the Main Wall; if the latter be the correct explanation, it is remarkable that the wall face should have shifted so much (about 1 ft. 4 in. out of its line) without suffering collapse. The hut measured internally 39 ft. 6 in. by a maximum of 17 ft. All four internal angles were rounded. Behind the N. angle were found the outer facing stones of Hut 3, and the outer face of the N.W. wall abutted against these stones in such a way as to show that Hut 2 was built after Hut 3 was already in position. It was not possible to tell if a similar relationship existed with Hut 1. A pit sunk in the high mound between them (at L on the plan, pl. xii) disclosed only a single upright stone that was not certainly a structural feature.

The entrance to Hut 2 lay in the middle of the N.W. wall and was paved (d in section c-d; the stones shown at e were a natural feature). Its N.E. side remained in the form of a row of upright slabs (c in section c-d, projected on to the section line from the N.E.). Its S.W. side had been completely destroyed (as also the paving stones in this half of the entrance), but a single inner post-hole was found, showing that the entrance had had a width of about 8 ft.

Trenching in 1949 disclosed that under some 2 ft. of stones and loose black soil

was a packing of stones that may have been a cobbled floor. In places this carried a thin layer of brown soil that yielded occupation material in the shape of fragments of charcoal, a number of badly corroded iron objects including a large round-headed square-stemmed nail bent twice at right angles as though clinched through a board, and many fragments of thin bronze plate. Below this level lay a further 1 ft. of stones and dark earth before the yellow clay subsoil was reached. In this stratum, close to the yellow soil, were found three tiny fragments of pottery, one of them a rim sherd of group 3 (p. 55).

This suggestion of two periods of occupation was not confirmed stratigraphically when the whole S.W. half of the hut was cleared in 1955. But an area near the S. corner was well paved with a double layer of thin overlapping slabs, and in the lower layer of these, inverted and re-used as a flagstone, was the fine upper stone of a rotary quern shown in fig. 3. Elsewhere the floor, which adjacent to the Main Wall sloped at rather a steep angle, showed little evidence of paving, but there was a discontinuous occupation layer just above the yellow subsoil (layer 3 in section c-d), and, about the centre of the S.W. half of the hut, a large depression containing two upright stones and full of dark earth. Other smaller pits were visible near the middle of the hut (*a* and *b* in section c-d). There were no post-holes, other than the one at the inner corner of the entrance. Little pottery was found, but there was one sherd of group 6 and the two pieces constituting group 7.

Near the W. corner a drain with two cover slabs in position emptied into the Courtyard through a well-built culvert passing under the hut wall. On the inner side this had two side slabs projecting at right angles from the wall face, and on the outer side a well-built outlet with neat jambs and lintel.

HUT 3

Hut 3 (plan, pl. XII; and section E-F, fig. 2) was a circular building to the E. of the Courtyard. Though the hut was clearly defined, none of its walling was visible before excavation. It formed a shelf about 3 ft. above the level of the Courtyard, and its wall on that side formed a bank whose summit was 4 ft. or more above the Courtyard. In 1949 the outer wall face had been traced from its junction with Hut 2 northwards towards the presumed site of the entrance. In 1955 the whole S.W. half of the hut was cleared including most of the entrance. The hut was found to be 21 ft. 6 in. in diameter and to have a well-preserved inner wall face partly of orthostats and partly of roughly coursed walling. The Main Wall of the enclosure formed the S.E. wall of the hut and was 8 ft. 6 in. thick at its narrowest point. On the S.W. the dividing wall between Huts 2 and 3 was 10 ft. 6 in. thick, but, as explained above (p. 47), there was an earlier outer face to Hut 3 which gave the wall a minimum width of 8 ft. Along the upper (S.E.) side of the building a great mass of stones fallen from the Main Wall lay on the hut floor.

Beneath a layer of humus soil (no. 1 in section E-F) the hut floor consisted of a thin occupation layer (no. 2) above the clay subsoil (no. 4). In places pits and hollows extended deeper into the latter. A drain, well defined though not lined with stones, ran across the floor from the foot of the Main Wall and out through the entrance. About the middle of the hut this passed through a deeper hollow or sump,

the bottom of which was silted with fine brown earth (layer 3) like the remainder of the drain; the upper levels of the pit were filled with dark occupation soil containing charcoal and a number of quite large stones.

The entrance lay on the W. (pl. XIIIb) and was originally 5 ft. wide between its orthostatic flanking walls. It had been rebuilt to a width of 4 ft. by the insertion of a new line of orthostats on the S. side; only the innermost of these remained in position, but the stone-holes of one or perhaps two others were found. The narrower entrance was paved, but a thin occupation layer corresponding to that within the hut ran over the top of the flagstones. Beneath the paving stones ran the drain from the interior of the hut, as also, midway along the entrance passage, a transverse slot silted with brown earth. This occupied the full width of the entrance before the narrowing described above took place, and may indicate the position of a wooden door-sill of the earlier period. At the outer end of the passage the paving slabs overlapped to form steps leading up into the hut from the Courtyard.

Hut 3 yielded no small finds apart from charcoal.

OTHER EXCAVATED SITES

Trench J. Traces of occupation were found in Trench J at the N.E. end of the Courtyard, within the area partly cut off by the wall running W. from Hut 3 (plan, pl. XII; and section G-H, fig. 2). The inner face of the Main Wall was not found in this cutting, but at a distance of 13 ft. from the outer face two large stones standing upright (*a* in section G-H), and set at an angle to the line of the Main Wall, may have had something to do with a structure built against the inner side of the latter. At 18 ft. from the outer face a good post-hole (*b* in section G-H), with three vertical packing stones in position, was sunk to a depth of 1 ft. into the yellow clay subsoil (layer 2). At 20 ft. from the outer face a large hearth about 4 ft. in diameter was uncovered; this consisted of a thick layer of clay burnt brick-red, on which lay much charcoal and burnt stone; its western edge was overlain by a large stone. At 32 ft. were signs of a similar hearth.

The wall running across the Courtyard had a width, in Trench J, of just over 4 ft., and was constructed of two faces of rather small boulders enclosing a core of earth and stones. It was traced westward for a total distance of 32 ft. from Hut 3, at which point it was only a little over 3 ft. thick. Tumbled stones were uncovered for a further 4 ft. but could not be related with certainty to the structure of the wall.

The hearth at the N.E. end of Trench J yielded a small fragment of Samian ware (group 1, p. 53) and a piece of an *olla* of black ware (group 6) with a lattice pattern. The trench produced several other sherds of group 6.

Hut 4 (plan, pl. XII). During the clearance of what was at first taken to be the inner face of the Main Wall, immediately N.E. of the Entrance, a small hut or chamber was found, built in the thickness of the wall. This was more or less oval in plan and measured internally 16 ft. by 10 ft. Its N. and W. walls were formed by the Main Wall, here about 4-6 ft. thick, and their inner faces ran in a curve. The E. and S. walls were straight, and were 3 ft. thick, faced on both sides with good slabs. The entrance, 3 ft. wide, lay at the E. corner of the room. A large shallow pit occupied the W. corner of the floor and appeared to extend under the Main

Wall. Two post-holes were found at the entrance; and two smaller and rather doubtful ones, at each end of the centre-line on the longer axis of the hut, may have held posts supporting a ridged roof. No occupation layer was found, but the building yielded the rim sherd described under group 2b, and eight fragments of group 3.

The inner face of the Main Wall was followed in a rather half-hearted fashion some distance beyond Hut 4. Though straight at first, at 8 ft. from Hut 4 it showed a pronounced curvature which continued for another 8 ft. before turning suddenly towards the Courtyard to form a narrow wall, 2 ft. 6 in. wide, projecting at right angles from the Main Wall (M on pl. xii). This was traced for about 6 ft. and then lost. It is not known what purpose these structures served.

SMALL FINDS¹

A. *Bone*. From the Period II layer in Hut 1 came a number of small fragments of presumably animal bones, all in very poor condition. The hearth-platform in the same hut yielded a few calcined pieces, in better state but too small for identification.

B. *Charcoal*. Charcoal was fairly plentiful on most parts of the site, but the largest pieces came from Hut 1 and provided the bulk of the specimens for identification. In 1949 three samples were sent to Mr. H. A. Hyde, M.A., F.L.S., of the Department of Botany in the National Museum of Wales, who very kindly supplied the following identifications:

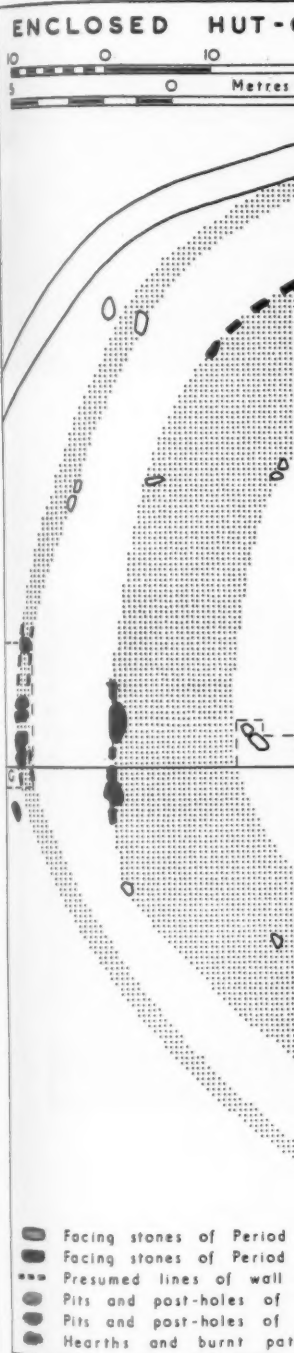
- Sample 1. Common Scots Pine (*Pinus sylvestris*).
 " 2. Oak (*Quercus robur*, *sensu lato*).
 " 3. " (" " ").

I have previously seen only one datable sample of pine from Welsh excavations, viz. Bryn Celli Ddu (Hemp, 1930), and (although my references are very incomplete) I think that such samples are very rare.

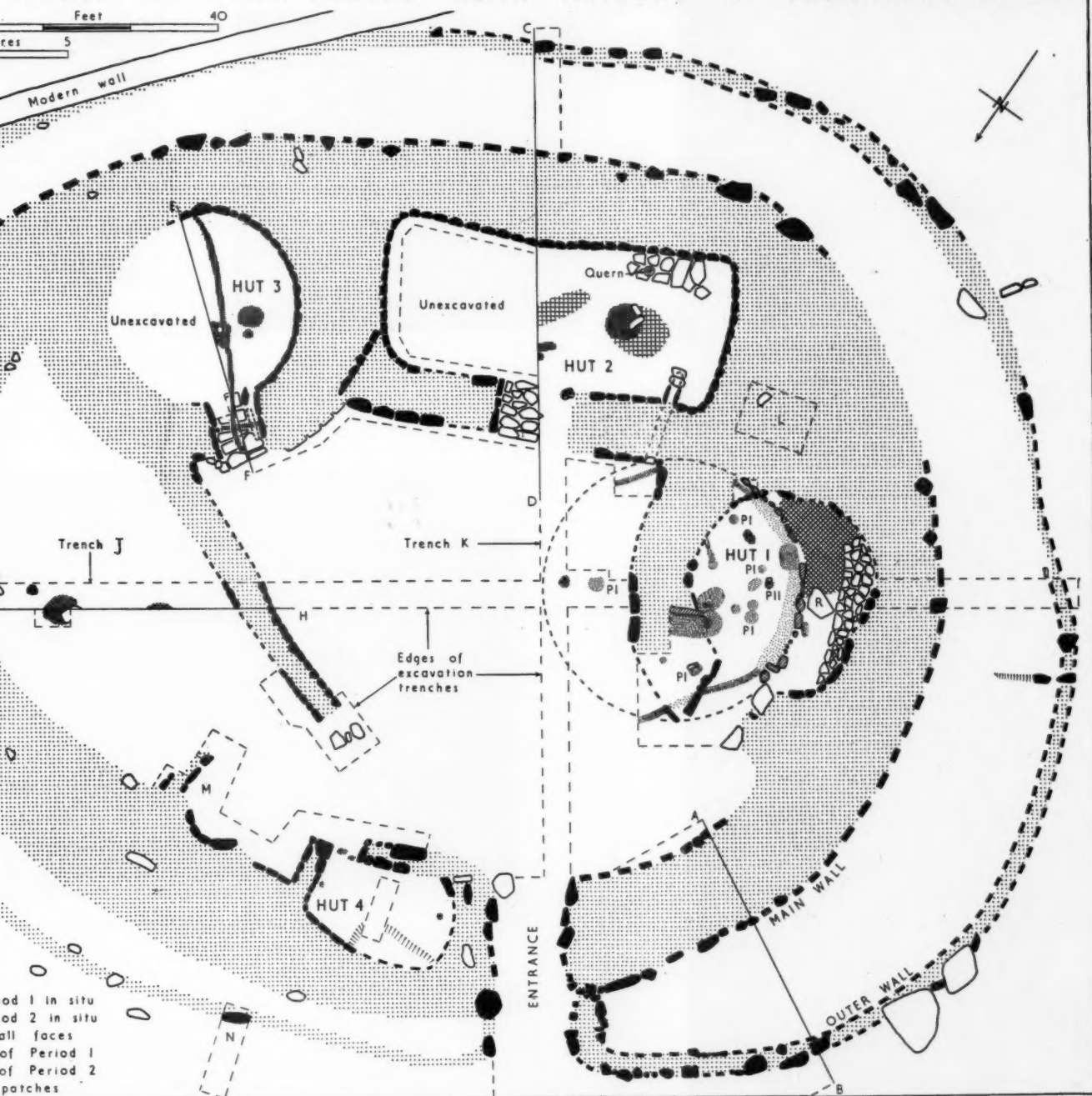
The oak was quite unlike what I usually get from excavations; it came from mature wood of fast-growing trees, not from gnarled scrubs and branches.

Unfortunately this interesting identification of pine was robbed of its value by a combination of circumstances which resulted in doubt being thrown on the provenance of Sample 1. Most of the 1949 charcoal came from the Period II layer in Hut 1, but a small quantity came from the Period III level where as we have seen (p. 43) there was evidence for a quite recent fire. The resulting possibility, viz. that the pine charcoal is much later in date than the remainder, is reinforced by the absence of pine from the accurately dated specimens from the 1955 excavations. I am much indebted to Mrs. F. L. Balfour-Browne, of the Department of Botany in the British Museum (Natural History), for the identifications listed below. Sample 4 came from the hearth and pit of Period I under the wall of Hut 1, Sample 5 from the Period II posthole in Hut 1, and Sample 6 from the floors of Huts 2 and 3.

¹ The objects described in this section have been presented to the Department of Archaeology, National Museum of Wales, Cardiff.



-GROUP AT CAE'R-MYNYDD NEAR RHIWLAS IN CAERNARVONSHIRE



od 1 in situ
od 2 in situ
all faces
of Period 1
of Period 2
patches



a. Inner face of wall of Hut 1 on the south-west



b. Hut 3 from the west; entrance in foreground



c. Hut 1 from the north: entrance in foreground

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was
two
sten

Sample 4. Birch.
Oak.
Sycamore.

Sample 6. Oak.
Ash.
Hazel.
Birch.
Gorse.

Sample 5. Birch.

C. Iron. Numerous fragments of iron objects were found in the Period II layers and the hearth-platform in Hut 1, in the upper layers in Hut 2, and in the Entrance to the enclosure. All were in an extremely corroded condition and in most cases it

ROTARY QUERN FROM CAE'R-MYNYDD

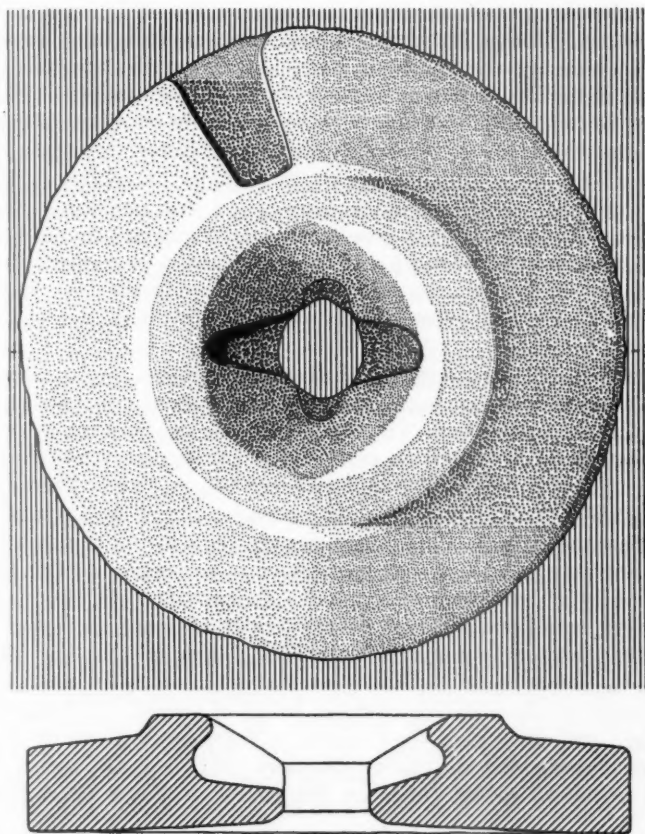


FIG. 3. (1)

was impossible to discover their original form. The only recognizable objects were two large nails (one $3\frac{1}{2}$ in. long, the other $4\frac{1}{2}$ in.) with round heads and square stems, both clinched over at the point. From the hearth-platform in Hut 1 came

numerous pieces of an object with a square hollow stem (about $\frac{1}{2}$ in. square), but its character and purpose could not be ascertained.

D. *Bronze*. The remains of an unidentified bronze object were found in Hut 2, near the entrance. They consisted of a mass of tiny shattered fragments of thin bronze plate. From the hearth-platform in Hut 1 came a blob of metallic copper or bronze, suggesting that the metal had been worked on the spot.

E. *Stone*. The outstanding stone object was the very fine upper stone of a rotary quern (fig. 3), found re-used as a paving stone in Hut 2. This averages $14\frac{1}{2}$ in. in diameter and $2\frac{3}{4}$ in. in maximum thickness, and has a central hole 2 in. in minimum diameter. The vertical edges of the stone are 2 in. in depth, and from them the upper surface slopes upwards slightly to a central collar $8\frac{1}{2}$ in. in external diameter and $1\frac{1}{2}$ in. in width. The under surface of the stone has a slight upward slope to the central hole, which has a vertical depth of $1\frac{1}{2}$ in. The central portion of the upper surface, within the collar, is occupied by a crater-shaped hopper. Two small feed runnels on opposite sides of the central hole, which is elongated slightly at these points, conducted the grain down to the grinding surfaces. At right angles to these runnels are two large undercut channels in the surface of the hopper. The function of these was to allow a wooden rynd to be wedged into position at the top of the central spindle. The hole for the handle is a wide slot at one side of the upper surface of the stone, $3\frac{1}{2}$ in. in length and tapering from 2 in. in width at its outer to $1\frac{1}{2}$ in. at its inner end; the sides of the slot are undercut, for wedging in the wooden handle. The quern-stone is finely worked all over and shows skill of a high order in its manufacture.

Rotary querns have been found not infrequently in the enclosed hut-groups of North Wales. It is sufficient to recall that four examples of this type were unearthed by O'Neil at Caerau (*Ant. Journ.* (1936), p. 317, fig. 6; p. 319, fig. 7). Of equal interest from our point of view is an early record of the discovery of a rotary quern by the farmer at Buarth-y-beran (*Arch. Camb.* (1866), p. 224). This is a small farm only 250 yds. S.W. of the Cae'r-mynydd homestead, and it may well be that the quern came from the latter.¹ Though precise parallels for all the details of its construction are not easy to find, the present quern is an excellent example of the late Romano-British type described by Curwen (*Antiquity* (1937), pp. 144-5). From the fact that the spindle was keyed to the upper and not the lower stone, it is evident that the quern was mounted on a raised table so that the spindle passed right through the lower stone and had a lever attached to its lower end by means of which the pressure at the grinding surfaces could be varied. This method of working is described and illustrated by Curwen in the case of a fourth-century quern from Thundersbarrow Hill in Sussex (*Antiquity* (1941), p. 26; and p. 23, fig. 27), and was still in use in recent times on the island of Foula (*ibid.* (1937), pl. III

¹ Since the above was printed, portions of the upper stones of two other rotary querns have been brought to my notice which there is reason to believe are from the Cae'r-mynydd homestead: (i) of coarse grit, $2\frac{1}{2}$ in. thick, parallel upper and lower surfaces sloping up at a fairly steep angle; about 14 in. diam.

with central hole 2 in. diam.; (ii) of a fine-grained rock, similar in shape to (i) but dimensions uncertain since the edge is missing. These examples reinforce the belief that the rotary quern is a standard type in the enclosed hut-groups.

between pp. 136 and 137). The open-slot form of handlehole was already in use in Early Iron Age times, being found for example at Maiden Castle in Dorset (*Maiden Castle*, fig. 115, 16; fig. 116, 25), and continued into the Roman period in South Wales (Gelligaer; *Trans. Cardiff Nat. Soc.* (1903), p. 88).

The only other worked stone discovered (in the Period II layer in Hut 1) was part of a circular holed stone 3 in. in diameter and 1 in. thick. The upper surface has been ground flat; the lower is damaged. At the centre is a round hole 1 in. in diameter. The stone is similar to but smaller than an example from House II at Caerau (*Ant. Journ.* (1936), p. 315, fig. 5). These objects (? loom weights, digging-stick weights, net-sinkers, or even 'mace-heads') are common stray finds in many parts of Wales.

F. Pottery.¹ One hundred and twenty-one pieces of pottery were found. Most of them came from the Period II layer in Hut 1, but Huts 2 and 4 and Trench J also yielded small quantities. Many fragments are too small to be of much use, but enough identifiable sherds remain to allow reconstructions to be made as shown in fig. 4. The following classes of ware are represented:

1. Samian ware; one or possibly two fragments. The first (fig. 4, 10) is a tiny triangular nodule of orange-coloured pottery with a dark red glaze on three of its sides. This puzzled me for a long time until it suddenly struck me that it is probably a piece from the junction of the wall, base and foot-ring of a dish, probably (to judge from the curve of the uppermost surface) with a high basal dome like Drag. 31. From the occupation layer within the Main Wall at the N.E. end of Trench J. The other sherd is of thin red ware with a very faint Samian-like glaze on its inner surface, closely comparable to the fragments found on Bodafon Mountain in Anglesey (*Trans. Ang. Ant. Soc.* (1955), p. 21). From the occupation layer in Trench J outside the N. wall of Hut 1.

2. Reminiscent of the Samian ware of group 1, and doubtless derived from it ultimately, are 30 sherds of soft pink or orange ware, the surface of which rubs off very easily. This is the common late Roman 'red-coated' or 'colour-coated' pottery discussed by Bushe-Fox in *Richborough*, i, 89-92. There are nine rim fragments and seven pieces of flange. Two vessels appear to be represented:

(a) A graceful bowl with foot-ring, curled-over flange, and tall vertical neck decorated externally with a double row of fine roulette marks just below the rim (fig. 4, 4). Possibly two vessels of this type are represented. From the Period II layer in Hut 1. This is Collingwood's form 32, generally assumed to be an imitation of the Samian form Drag. 38. Most of the published examples are of late third-century or fourth-century date, e.g. Segontium, third quarter of fourth century (*Cymm.* xxxiii, fig. 77, 39); Caerleon, fourth-century (*Arch. Camb.* (1940), p. 145, fig. 12, 36); Richborough, all late third or fourth century (*Richborough*, i, pl. xxviii, 109-112). An example at Lydney was found 'amongst the material which collapsed at some date after 364 into the swallow-hole beneath the temple' (*Lydney*, fig. 26, 24).

¹ For useful comments on the pottery I am indebted to Mr. L. Alcock, M.A., F.S.A., Dr. H. N. Savory, M.A., F.S.A., and Mr. A. C. Thomas, M.A.

Rouletting is fairly common on Romano-British coarse ware, and frequently covers a considerable area of the wall of the vessel. It was extensively used, either alone or in combination with stamped devices, on the late colour-coated pottery of

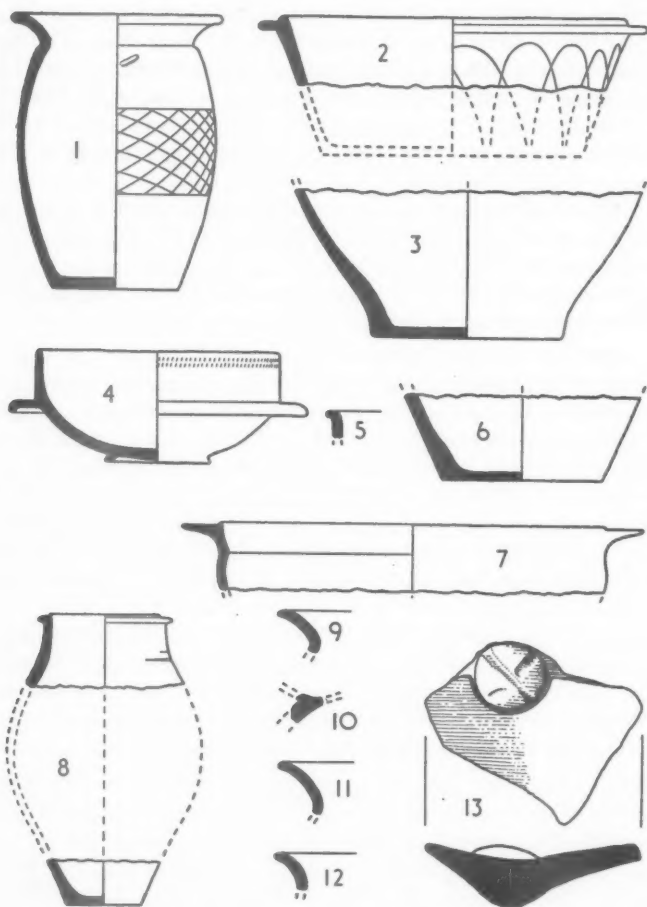


FIG. 4. Pottery from Cae'r-mynydd. (4)

which the present vessel is an example. A fourth-century bowl from Richborough has a double row of roulette marks just below the rim, as on the Cae'r-mynydd specimen (*Richborough*, i, pl. xxix, 125).

In view of the recent discovery of dark-age imported pottery in Caernarvonshire (*Dinas Emrys*; *BBCS*, xvi, pp. 53, 214; xvii, p. 56), I thought it as well to submit the group 2a pottery to Mr. Charles Thomas for examination. He distinguishes (i) two

specimens of a bowl with curled-over flange; and (ii) a bowl with rouletting below the rim, and possibly a flange. He agrees that no. ii is an example of late Roman colour-coated ware, but says that no. i 'compares pretty exactly in fabric, colour, type of fracture, lamination, and form with the imported post-Roman class Ai, particularly the rim from Porthmeor, Cornwall (*Proc. W. Cornwall F. C.*, II, i (1956-7), fig. 5, 2). If I am right about the Porthmeor sherd, and it is like the Tintagel Ai, and occurs in my proposed common source of Late Roman B or C, then your no. i sherds belong to this as well. They could, I think, be a little later than 400 A.D.' I do not altogether agree with Mr. Thomas, and think that all the sherds belong to a single bowl (or two specimens of the same type) of the kind shown in fig. 4, 4. Nor can I see any real distinction in fabric between no. i and no. ii. But in view of the possibility that future work may confirm the presence of imported post-Roman pottery in the hut-groups of North Wales—and in view too of the possible connexions with the Cornish courtyard houses mentioned on p. 60—I think Mr. Thomas's views are worth stating. In any case the difference of opinion affects not so much the date of the pottery as its origin.

(b) A wide bowl with a double curve on the inside and a rim with broad tapering flange (fig. 4, 7); from Hut 4. This unusual type is difficult to parallel among the published material from other sites.

3. A hard pinkish-buff ware with smooth surfaces; 11 pieces. There are two rim sherds and one piece from the junction of wall and base, but it is not known how many vessels are represented. One rim seems to be from a bowl or dish with a flange, rather like fig. 4, 2, but the flange is now broken off; from Hut 4, where most of the sherds of this group were found. The other rim, from Hut 2, is from a vertical-sided vessel with a flat rim having a small external bead (fig. 4, 5). A portion of the flat base of a straight-sided flower-pot type of vessel (fig. 4, 6) came from the Period II layer in Hut 1.

4. The largest group, represented by 45 sherds, is a hard sandy ware with a black or grey core and red or reddish-buff surfaces, rough to the touch, in which some grains of mica are visible. There are eleven rim fragments, one piece of base, and six decorated body sherds. Three vessels are represented:

(a) A jar with cavetto neck and oversailing rim (fig. 4, 1). The body bears externally a band of obtuse-angled trellis pattern in burnished lines, bordered above and below by a single horizontal line. The surface above the decorated band and the inner slope of the rim have a cream-coloured slip. The jar has been mended with iron rivets in two places just below the neck. From the Period II layer in Hut 1. This is Collingwood's form 73, dated to the fourth century, perhaps chiefly to the first half of the century. Two examples so dated were found at Segontium with a flanged bowl of the type of fig. 5, 2 (*Cymm.* xxxiii, fig. 78, 56; fig. 80). At Chester the form appears already in the late third century (*Journ. Chester Arch. Soc.* (1950), p. 24, fig. 10, 34). It was found at Wroxeter (*Wroxeter* (1913), fig. 19, 67) and at the Brecon Gaer (*Cymm.* xxxvii, fig. 100, C73), and at Caerleon (*Arch. Camb.* (1940), p. 143, fig. 11, 14, and p. 146) was said to be 'in common use at the end of the occupation' (i.e. c. 375). At Lydney a series of these jars was demonstrably of late-fourth-century date (*Lydney*, fig. 26, 32-35; fig. 27, 39). The repair of broken

pottery with metal rivets is a common feature in the excavated hut-groups of Anglesey and Caernarvonshire.

(b) A conical bowl with a flanged rim (fig. 4, 2). The exterior has traces of a reddish slip and is ornamented with an arcade of intersecting parabolic arcs in burnished lines. From the Period II layer in Hut 1: this is Collingwood's form 30. It had a long life, but examples with horizontal flanges and a decoration of intersecting arcs are usually of fourth-century date. The earlier forms are found already in the early second century at Kanovium (*Arch. Camb.* (1934), p. 57, fig. 30, 229-33) and Gelligaer (*Trans. Cardiff Nat. Soc.* (1903), pl. xii, 11), and an example very like that from Cae'r-mynydd was probably not later than 230-40 at Chester (*Journ. Chester Arch. Soc.* (1950), p. 24, fig. 10, 29). But reliably dated fourth-century examples are common, e.g. Caerleon (*Arch. Camb.* (1940), p. 145, fig. 12, 47); Lydney (*Lydney*, fig. 27, 40-43); Richborough (*Richborough*, i, pl. xxix, 121-2); Maiden Castle, second half of fourth century (*Maiden Castle*, fig. 80, 54-55).

(c) A jar with an everted rim (fig. 4, 9), represented by three small fragments from the Period II layer in Hut 1. The vessel was probably similar in general to fig. 4, 1, but the rim is deeper and thicker, and the marks of wheel-turning are visible externally in a series of slight grooves just below the lip.

5. A rather corky ware with a black core and black or light-brown surfaces, slightly vesiculated; 13 sherds, probably all from the same vessel, found in the Period II layer in Hut 1. They include two pieces of base and allow the partial reconstruction of a large jar with base $4\frac{1}{2}$ in. in diameter and incipient foot-ring (fig. 4, 3). This appears to be similar to a vessel from the hut-group at Porth Dafarch on Holyhead Island (*Arch. Camb.* (1878), opp. p. 27), and both are probably of the same type as a 'large olla of vesiculated or calcited ware', dated early fourth century, from Segontium (*Cymm.* xxxiii, fig. 78, 58). At the latter site this kind of ware was stated to be 'characteristic of mid or late fourth century strata in the fort'.

6. Black ware with burnished outer surface; 13 fragments, including two pieces of rim and two body sherds decorated with a lattice pattern. It is not known how many vessels are represented, but they seem to have been mainly *ollae*. The two rim fragments are not from the same vessel; the first (fig. 4, 11) is from the Period II layer in Hut 1, the second (fig. 4, 12) from Trench J, near the wall crossing the Courtyard. A third broken portion of the curving neck of a vessel shows one side of a rivet hole.

7. A hard stony black ware, with smooth but not burnished surfaces. This is represented by two fragments only, found in Hut 2, and both probably from the same vessel (fig. 4, 8). This appears to have been a beaker. Two short horizontal scored marks are visible on the neck. The body is missing, so the outline of the vessel in fig. 4 is conjectural, but it was probably related to the continental bulbous beakers with tapering neck and narrow base which were commonly imitated in the south of the country at least during the third and fourth centuries. Examples may be cited from Wroxeter, 'third or early fourth century' (*Wroxeter* (1913), fig. 19, 69), and 'probably fourth century' (*ibid.* (1914), pl. xxviii, 81); Lydney (*Lydney*,

fig. 27, 60-61); and Richborough, 'found in association with pottery of the fourth century' (*Richborough*, i, pl. xxvii, 96; pl. xxix, 120).

8. Five large fragments of globular amphorae, of thick rough pink ware with a sandy surface and plenty of mica grains. These were unstratified in the Courtyard and in the upper layers in Hut 1. The base shown in fig. 4, 13, came from the foot of the outer wall-face of Hut 1, on the N.E. side of the hut. It is of interest in showing externally the basal protuberance of the vessel, and internally a circular boss surrounded by a deep groove and surmounted by 'hot-cross-bun' marks—features derived from the operation of turning the vessel during manufacture.

SUMMARY AND OBSERVATIONS

The Cae'r-mynydd homestead is a member of the family of 'enclosed hut-groups' found in large numbers in Anglesey and on the lower hill slopes of Caernarvonshire and west Merionethshire. It lies at 600 ft. above O.D. on the N.W. side of Moel Rhiwen, near Rhiwlas, in the midst of an extensive series of lynchetted fields. A number of other enclosures of similar character occur in the same area. The hut-group is an oval enclosure, 110 ft. by 85 ft., surrounded by a Main Wall 8-12 ft. thick, consisting of a drybuilt outer face of boulders backed by a sloping ramp of large stones, earth and smaller stones, the foot of which was revetted by a line of boulders representing the inner face. At distances varying from 4 to 16 ft. outside the Main Wall, an Outer Wall consisting of little more than a single line of boulders likewise encircled the hut-group. This was an addition to the original plan. It is a very rare feature—though not entirely absent—among the other enclosed hut-groups of Gwynedd. Its purpose is obscure, but it may have been intended to prevent damage to the Main Wall by domestic animals or children. The Entrance to the hut-group lay on the N.W. and led to a central Courtyard. A small oval hut (Hut 4), 16 ft. by 10 ft., lay just within the gate on the N.E. side, in the position occupied in defensive structures by a guard-chamber.

Excavation showed that along the N.W. side of the hut-group the Main Wall was built on a pre-existing terrace. This could have been one of the lynchets of the field system, but investigations on the upper (S.E.) side of the enclosure showed that a similar soil to that of the terrace had accumulated against the Main Wall after the erection of the hut-group, and may have been of natural origin. The question is one of some importance in any attempt to fix a date to the introduction of the 'Celtic field' type of agriculture into north-west Wales, and in retrospect it seems obvious that we should have cut a section through a typical lynchet in the vicinity, to see how it compared with section A-B through the Main Wall. This point might be borne in mind by future investigators at sites of this character.

Within the hut-group were two circular huts and one rectangular building, as well as a wall crossing part of the Courtyard and traces of occupation at the N.E. end of the latter. The buildings were all placed against the Main Wall of the enclosure so that in each case the latter formed one wall of the structure. The remaining walls were low and massive and were constructed of two faces of either orthostats

or roughly coursed drybuilt walling, or sometimes a mixture of both, enclosing a core of stones and earth. Hut 1 was a round hut at the S.W. end of the enclosure and yielded evidence of three periods of occupation. In Period I it was 28 ft. in diameter and occupied a site slightly different from its successor of Periods II and III. Its S. side formed a revetment along the base of a slope; a drain followed the curve of this wall just within the hut, and at either end straightened out to discharge to the N. probably under the hut wall, which along this side had been entirely destroyed. Post-holes within the hut suggested that the roof had been supported by a ring of uprights about 4-5 ft. from the wall, spaced at intervals of 6-9 ft. In Period II the hut was entirely rebuilt on its present site. It was now 20-22 ft. in diameter and the roof may have been of wigwam type supported by a single central post. The floor was partly paved; a raised stone bench cut off a chord of the circle on the S.W.; and on the S. was a large bank of rammed clay forming a 'hearth-platform', which yielded abundant traces of burning and some evidence that metal-working had been carried on at this spot. Finally in Period III a new paved floor was thrown over the hut, flush with the top of the stone bench; the entrance, which lay on the N., was paved; the hearth-platform was retained in use; and a drain was constructed along the inner face of the N. and E. walls.

Hut 2 was rectangular with rounded internal angles and had been inserted between Huts 1 and 3 on the S.E. side of the Courtyard. It measured 39 ft. 6 in. by 17 ft., and was entered from the Courtyard through a paved doorway. The main period of occupation was probably contemporary with Period II in Hut 1; evidence for a later period consisted mainly of the re-use of a rotary quern as a paving slab, but there was nothing by which to gauge the separation in time of the two periods beyond the doubtful assumption that rotary querns had gone entirely out of fashion when the pavement was laid.

Hut 3 was circular, 21 ft. 6 in. in diameter, and lay on the E. side of the Courtyard. It was entered from the latter up a flight of steps. A drain ran across its floor from E. to W. and discharged under the paving of the entrance. The latter yielded evidence of two constructional periods. In the first, a wooden door seems to have occupied the middle of an entrance passage 5 ft. wide. Later the door was removed, the entrance was reduced to 4 ft. in width, and the passage was paved.

Small finds included a few scraps of bone; a fair quantity of charcoal (for the identification of the woods, see p. 50); various badly corroded iron objects including large nails; some shattered pieces of bronze plate; a holed stone; the upper stone of a rotary quern of late Romano-British type (fig. 3); and about 120 potsherds (fig. 4).

The economy of the dwellers in the hut-group was clearly based on agriculture but the working of iron and bronze was also carried on, and in many ways Hut 1 could be regarded as a smithy. The circumstantial evidence for roof timbers, door frames and quern-tables suggests a considerable skill in carpentry, and certainly the rotary quern is proof of the expert dressing of hard stone. The feeble evidence for the activities of the womenfolk affords a marked contrast to these male accomplishments. Pottery was obtained probably from the Roman garrison at Segontium or the traders living outside the walls of that fort, and was so scarce that when a vessel

was broken it was carefully mended with iron rivets. Again, the complete absence of spindlewhorls is striking, and stands in sharp contrast to the equipment of the Early Iron Age natives from hill-forts like Conway Mountain.¹

The evidence for date is based on the pottery (supplemented by the quern, which is probably fourth-century). I believe it would be reasonable to say that all the pottery could be placed in the range A.D. 250-450, and that within these extreme limits the most likely period is the fourth century. At one end of the scale, the two poor scraps of Samian ware are doubtless survivals from the third century. At the other, it is probable that types current in the fourth century in southern Britain remained in use in North Wales as late as the middle of the fifth century; and indeed if some of the pottery is to be regarded as post-Roman imported ware (see p. 55), it can hardly be earlier than 400. It is incidentally interesting to observe that the Pant-y-saer types of pottery² are not represented at Cae'r-mynydd, which reinforces the belief that Pant-y-saer is substantially later than Cae'r-mynydd and belongs to a period when Romano-British pottery had to all intents and purposes gone out of circulation.³ In the absence of a native tradition of potting, the Anglesey villagers were thrown on their own resources and succeeded only in manufacturing the very inferior pottery that Phillips found at Pant-y-saer. In marked contrast, the Romano-British architectural traditions remained in vogue, so that in plan and construction Pant-y-saer and Cae'r-mynydd are remarkably alike.

The period thus dated by the pottery is undoubtedly that represented by the constructional details of Period II in Hut 1, in which the hut-group in its present form first came into being. It is less easy to date Periods I and III. From the fact that no major alteration took place in Period III, and that the hearth-platform and the upper surface of the stone bench were retained in use, it is unlikely that any considerable lapse of time separated Periods II and III. Period I, on the other hand, represents a sharp break in the architectural history of the site. The older hut was larger and more sophisticated in its roof construction than the Period II building, and was, moreover, on a different site. But there was nothing to date it. It is true that Trench J, just outside the N.E. wall of Hut 1, yielded two small pieces of Romano-British pottery, but there was no stratification at this point and we cannot really be sure that they came from the hut floor. The complete absence of pottery from the rest of the Period I floor might suggest a pre-Roman date, but might equally well result from the thorough clearance of the site by the Period II builders.

It is interesting to observe that the Period I hut compares well in diameter (28 ft.) with the detached hut lying to the E. of the enclosure (30 ft.; see p. 36 for a description), and that both are in contrast to the later Hut 1 (20-22 ft.) and Hut 3 (21 ft. 6 in.). Could it be that a settlement of unenclosed round huts once occupied the site where the enclosed homestead was later erected? There is at present no answer to this intriguing question, nor to the even more difficult one of the relation of either of these large huts to the supposed early lynchet on which the hut-group

¹ *Arch. Camb.* (1956), p. 77, fig. 13.

² *Ibid.* (1934), pp. 22-27.

³ The date of the Pant-y-saer silver brooch cannot be much earlier than 600; *ibid.*, pp. 19-20, fig. 7.

was built. In retrospect, I think we should have excavated the detached hut;¹ and this again is a point which some future investigator might consider.

This is not the place to consider the general question of the enclosed hut-groups of Gwynedd. Such a task must await the completion of the *Caernarvonshire Inventory* of the Royal Commission on Ancient Monuments, and a new survey of the hut-groups of western Merioneth. But I think one particular point might profitably be discussed, since the Cae'r-mynydd site has been made the object of a comparison which is apt to be misleading: Hencken, in discussing the courtyard houses at Chysauster in Cornwall, published Elias Owen's plan of the Cae'r-mynydd hut-group alongside plans of Cornish courtyard houses and a Scottish broch.² Owen's plan had been drawn in such a way as to show the individual walls of the structure, but the simplified block plan adopted by Hencken gives undue prominence to the existence of chambers built in the thickness of the enclosure wall, and in particular suggests that the space between the Main and Outer Walls was an actual mural passage. The result is to exaggerate the resemblance between Cae'r-mynydd and, on the one hand, the elongated chambers of the courtyard houses, on the other the ground-floor rooms of a broch. The individual huts in an enclosed homestead are very rarely contained in the thickness of the enclosure wall. Some of the chambers at Caerau were certainly built in this way, but Caerau is unusual in this respect and the great majority of the enclosed hut-groups exhibit plans in which the huts are placed against the inner face of the enclosure wall, or are even in a number of cases free-standing. This is not to deny that there is in other respects a strong family resemblance between the courtyard houses and the enclosed homesteads, and in this connection the similarities between some of the Cae'r-mynydd pottery and a vessel from Porthmeor in Cornwall, mentioned on p. 55 above, may prove to be of more than general significance. The analogies between the enclosed hut-groups and the brochs are more apparent than real. Scott has shown³ that there are both chronological and functional difficulties in attempting to derive the plan of the brochs from that of the courtyard houses, and has sought the origin of both brochs and wheelhouses in the Iron Age B culture of south-western England.

¹ As a matter of fact, I began a trench across the hut in 1949, but was forced to abandon it when our labour supply failed. In 1955 we always seemed to have too many other things to do, and were never

able to return to it.

² *Arch. lxxxiii*, 279; *Arch. of Cornwall and Scilly*, pp. 151-2.

³ *P.P.S.* (1947), pp. 24 ff.

A PROVINCIAL ROMAN SPUR FROM LONGSTOCK, HANTS, AND OTHER SPURS FROM ROMAN BRITAIN*

By HUGH DE S. SHORTT, F.S.A.

IN 1953 a bronze prick-spur was found without other remains, at a depth of about 2 ft. on Cleave Hill, in the parish of Longstock, Hants (no. 17, fig. 1, pl. xiv). The finder, Mr. J. Chandler, presented it to the Salisbury Museum (acc. 21/54) and it is recorded and illustrated in the Museum's *Annual Report* (1955), p. 11, pl. 1a.

It is of extremely delicate manufacture, and the riveted prick appears to be ornamental rather than useful. It is also ornamented with a row of dots in circles round the heel, and these are enclosed in expanding lines all engraved in the bronze. The edges are lightly serrated. The arms are engraved with a spiral line, which seems to imitate the leather binding of some rougher iron prototype. Delicate bronze rings, attached to the loops, have flattened ends which are pressed together and probably once held a light leather strap, though the bronze has broken away leaving only parts of the rivet holes. There are few ornamental features from which to date this spur, but according to Jahn's typology it should fall within the first century A.D.

Spurs were not in general or even common use in the Roman empire. Jahn¹ has traced their development in three main types, all stemming from the spurs of La Tène cultures of the first century B.C. illustrated by Déchelette² and Zschille-Forrer.³ They all occur both in bronze and iron, or in bronze with iron pricks or iron rivets, but there is a propensity towards bronze in the Roman provinces. The arms of the La Tène spurs are short and widely splayed, ending in large circular studs.

Jahn's first type, recently noticed by Wheeler⁴ from a grave at Dollerup (Denmark), he calls a chair-spur (*stuhlsporn*). It consists of a substantial point or prick fitted to vestigial arms, which assume the form of a small thick plate, usually in the shape of an H or an hour-glass, with two or four rivets. It belongs principally to northern Europe.

The second type is the stud-spur, a more direct descendant of the La Tène form, though the arms become considerably lengthened and rounded to the shape of the heel. In later forms the ends are bent outwards and turned back as hooks, which take the place of studs. This type, which is very often made of iron, is sometimes found on Roman sites, in England notably at Colchester, Corbridge, and Hod Hill, but its home would appear to be east or central Germany.

The third type, which Jahn calls provincial Roman, and to which most British

¹ M. Jahn, *Der Reitersporn* (Leipzig, 1921) *menentwicklung*, i (1891), pls. i and ii; ii (1899), (Mannusbibl. no. 21), with a list of Roman spurs pls. xxi and xxii.

² *Second Âge du Fer* (1914), p. 1202, fig. 514.

⁴ R. E. M. Wheeler, *Rome beyond the Imperial Frontiers* (1954), p. 39.

³ Zschille und Forrer, *Der Sporn in seiner For-*

* Published with the aid of a grant from the Council for British Archaeology.

examples belong, has arms which end either in rectangular slots or circular loops, or in plates with rivets on the inner side. Rivet-spurs often have a hook protruding above the heel-plate, and this is sometimes replaced by a third rivet either at the top of a vertical arm or occasionally on the heel-plate itself.



FIG. 1. Roman spur from Longstock, Hants. ($\frac{1}{2}$)

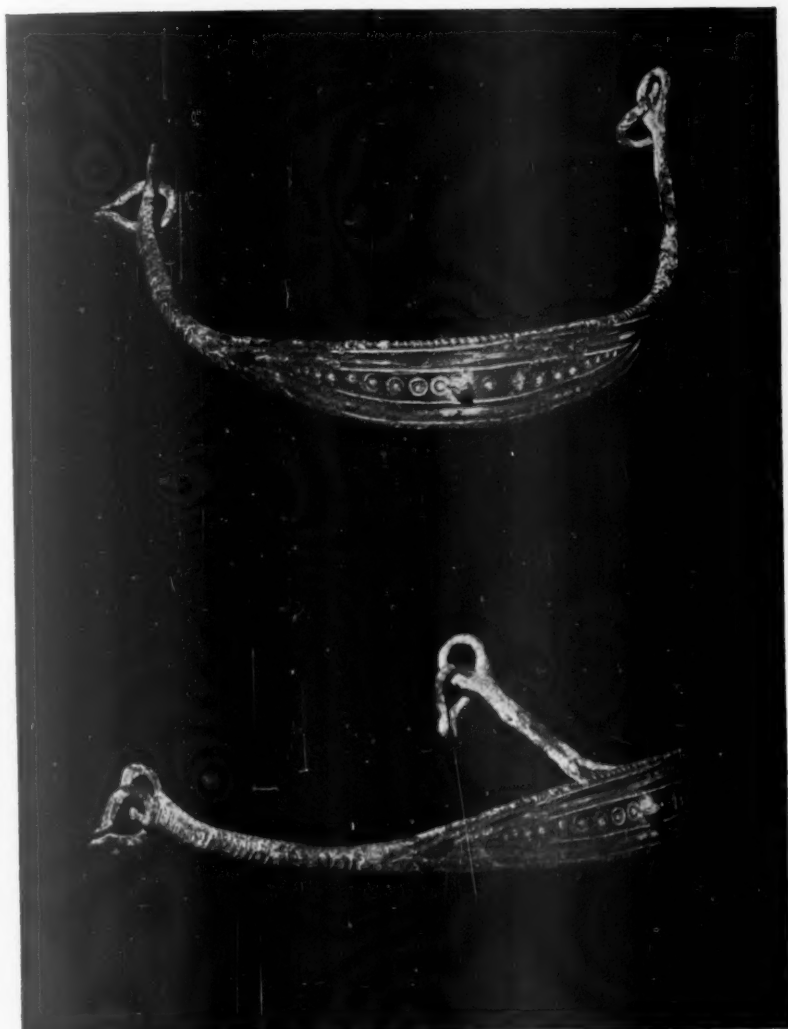
Few spurs of Roman date have been recorded in England, and, of these, five appear to have originated outside the imperial frontiers. A bronze spur from Pakenham (Suffolk)¹ is difficult to place (no. 19, fig. 2, pl. xv). It has widely splayed arms only $1\frac{1}{2}$ in. long, terminating in bull-like heads which form a kind of loop with their mouths. The prick too is held in the mouth of a third, similar head, fixed to the heel-plate. These hornless heads bear a marked similarity to those on certain staters of Dubnovellaunus from the northern shore of the Thames estuary, and may, like them, be intended for horses. The eyes of the animals were filled with opaque blue glass. One on each side is now missing. There is a strongly Celtic flavour in this example. Another bronze spur, with studs instead of loops, was found at Colchester² (no. 5, fig. 3). The point is very large, while the arms are short and widely splayed. The form is dated by Jahn to the second century A.D. It presumably belonged to a German cavalryman.

Yet another bronze stud-spur was found in the fort of Trimontium (Newstead) in the parish of Melrose³ (no. 18). It was recovered by A. D. Curle from unstratified debris and is now in the National Museum of Antiquities of Scotland. One arm is broken. On the other, a small ring of leather survives. It is of sturdy make, and probably belongs to the third century, though the circular heel-plate which holds the conical prick is an early feature. This is the only spur noticed north of Hadrian's Wall.

¹ *Arch. Journ.* i (1844), 246, and *J.B.A.A.* iii (1848), 119, fig. Ashmolean Museum, John Evans Collection from J. Warren of Ixworth.

² *P.S.A.* 2nd ser. iii (1867), 422, fig.

³ *P.S.A. Scot.* 5th ser. iii (1917), 232-3, fig. 1, no. 3.



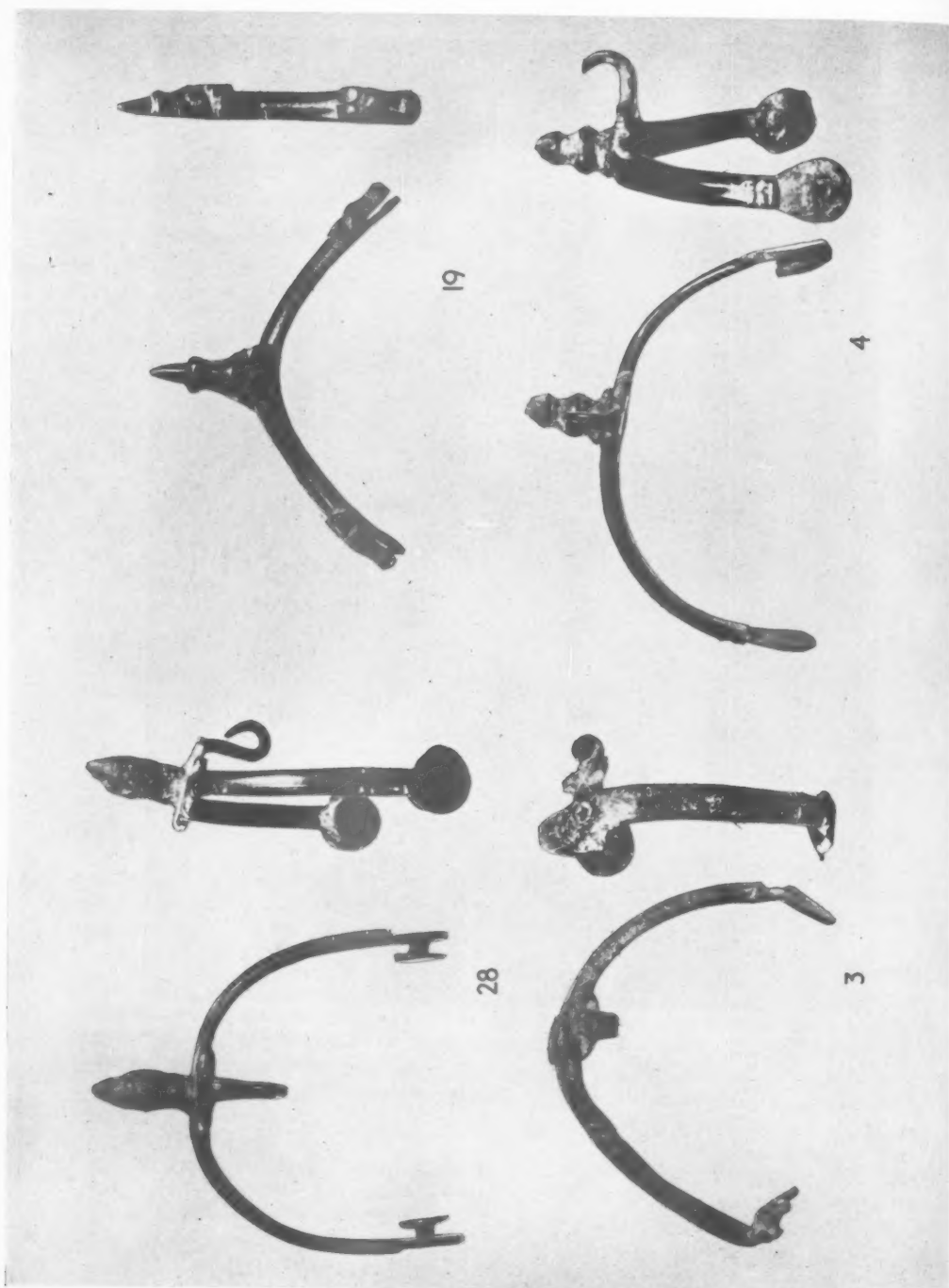
The Roman spur from Longstock, Hants (1)

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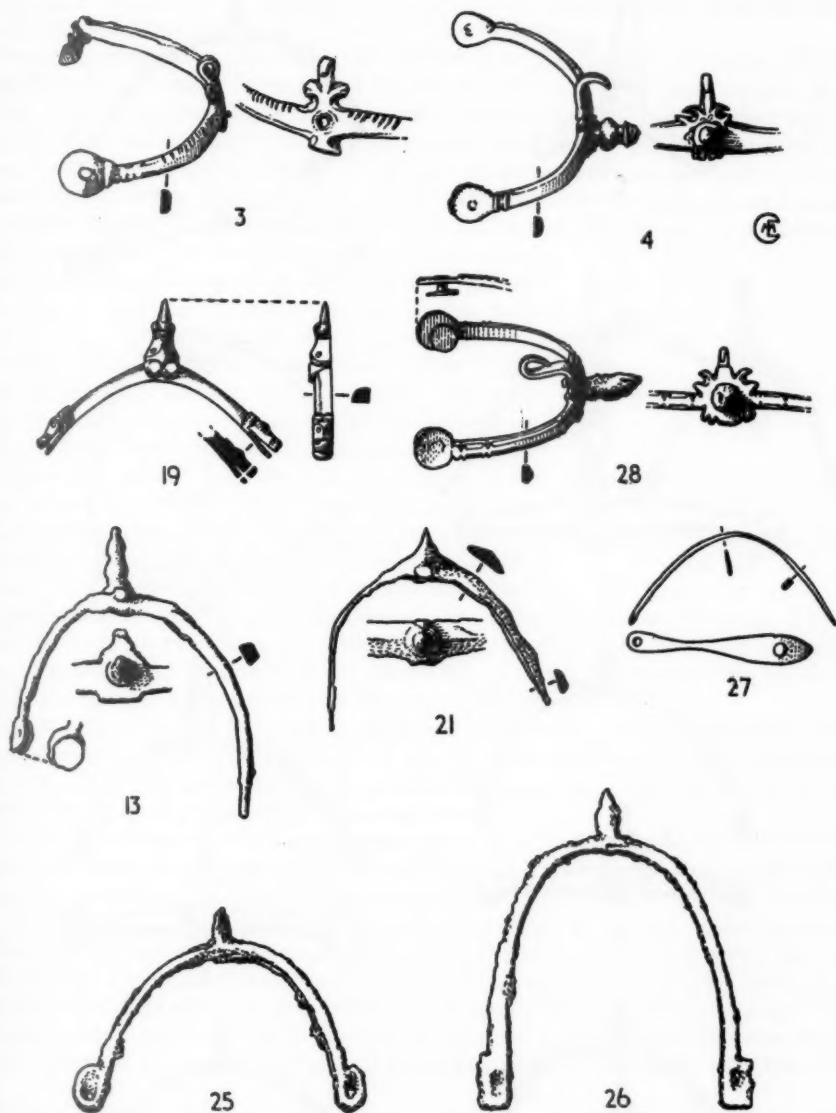


FIG. 2. Romano-British spurs. (1/2)

3 and 4. Chedworth. 19. Pakenham. 28. Woodeaton. 13. Dorchester (Dorset). 21. South Shields.
27. Wall. 25, 26. Hod Hill.

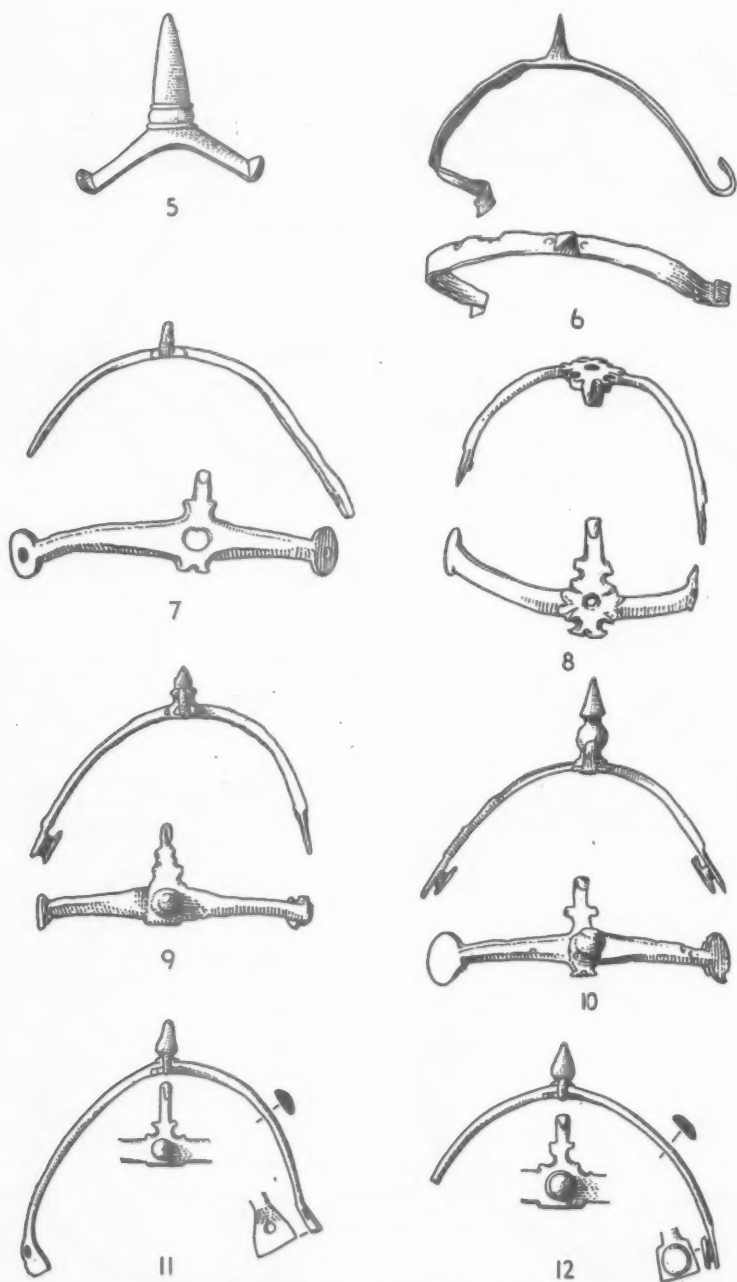


FIG. 3. Romano-British spurs. (4)
5. Colchester. 6-10. Corbridge. 11, 12. Dorchester (Dorset).

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The spurs which follow belong to the provincial Roman series, with the exception of the iron hook-spurs from Hod Hill and Corbridge.

Five spurs from Hod Hill in Dorset, formerly in the Durden collection, are now in the British Museum. Two are of bronze and three of iron (nos. 22-26, figs. 2 and 4). One of the iron examples has never been illustrated, but together they are probably the total found on the site and must account for Wright's remark¹ that 'several' were found there. Warne illustrated three,² two of iron and one of bronze. Charles Roach Smith illustrated the same three,³ but mentioned a second bronze spur which has now been illustrated by C. de L. Lacy.⁴ The more complete bronze



FIG. 4. Iron spur from Hod Hill. ($\frac{1}{2}$)

example is figured in the British Museum's *Guide to the Antiquities of Roman Britain*,⁵ and the Durden collection is here dated to the middle of the first century A.D. These two bronze spurs are very delicately made and without ornament. The small prick (missing on one) is slightly to one side and the pairs of loops are elongated and in the horizontal plane. Of the two illustrated iron specimens, one has the arms turned back on the outside to form loops, while the other, with longer arms, has rectangular slots, also in the horizontal plane. Both have pricks of moderate length. The third example, probably German, is of the same general character,

but the prick is longer and shouldered, or rather swells at the base like an onion, and the arms are more widely splayed at the ends, forming a kind of hook. Professor Richmond's recent discovery of cavalry barracks with stables at Hod Hill provides a reason for this concentration of spurs.

A very plain example in bronze-coated iron, from King Street, Cheapside, illustrated in *London in Roman Times*,⁶ is of sturdy build like one from Richborough, with a conical prick more than half an inch long (no. 16). The arms end in oval loops in the vertical plane. There is no ornament.

A small and delicately fashioned bronze spur preserved in the Ministry of Works Museum at Wall (Letocetum) in Staffordshire, and found on the Roman site there, appears to provide a connecting link between the early loop spurs and the rivet-spurs of the second century (no. 27, fig. 2). The holes at the end of the arms, one of which is defective, are too small to be considered as loops, and may have held rivets, though there is no plate to correspond in diameter with the head of the rivet. The prick also is missing. The slender proportions give an air of fragility and there is no hook above the heel-plate; nor is there any ornament. The prick was exactly centred between the rivets. In fact, all the characteristics except for the rivet holes

¹ T. Wright, *The Celt, the Roman and the Saxon* (1861), p. 355.

² C. Warne, *Ancient Dorset* (1872), pl. III opp. p. 155.

³ C. Roach Smith, *Collectanea Antiqua*, vi, pt. i (1862), p. 7, pl. III.

⁴ C. de L. Lacy, *History of the Spur* (c. 1905), p. 23, pl. vi.

⁵ (1922), p. 84. See also *J.B.A.A.* III (1848), 98, fig.

⁶ R. E. M. Wheeler, *London in Roman Times* (1930), p. 151, fig. 58.

point to an early date and one is not surprised to learn that Wall was a military camp in the mid-first century A.D. Later it became a small town on Watling Street.

A bronze spur from Richborough¹ probably dates from the first half of the second century (no. 20). It is of the rivet and hook variety, fairly massive, and was attached by iron rivets. The missing prick also seems to have been made of iron. A rowel is mentioned in the description, but rowel-spurs were unknown to the Romans. Jacobi mentions² one from Salburg, but it is evidently a medieval intrusion on the site.

Another bronze spur, with iron point, a later development of this variety, was found at Woodeaton, near Oxford³ (no. 28, fig. 2, pl. xv). It is in excellent condition except that the hook above the heel-plate has been bent inwards. The two rivets are intact. The arms and heel-plate have chiselled ornament.

Two other Roman bronze spurs, so far unpublished, are in the Chedworth Villa Museum (nos. 3, 4, fig. 2, pl. xv). They were found on the site. Both are rivet-spurs of similar design to the Woodeaton example, though with rather less ornament, and while the prick of one is missing, the other is of bronze and is delicately shaped. The hooks above the heel-plate have survived in their true vertical position.

Through the courtesy of the Council of the Dorset Field Club I am able to publish four iron spurs, three of this type, in the Dorchester Museum, found by the late Lieut.-Col. C. D. Drew within the Roman wall of Dorchester on the Colliton Park site (nos. 11-14, figs. 2 and 3). Except that the arm of one is broken, these spurs are in excellent condition. Two are remarkably similar, but they are not a pair, although found close together in an upper layer of a trial trench containing New Forest sherds. They are numbered 2179 and 2180 in the site register. The other two spurs (1430 and 1891 of the register) were found in a layer of 'grey silt' apparently under the solid collapsed east wall of Room XV in Building 1. The layer contained Constantinian coins of the second quarter of the fourth century. No. 1430 is very like the other two spurs from the site except that the prick curves slightly upwards; there is less ornament and the rivet plates are round instead of angular. Unfortunately No. 1891 has not yet been traced among the stored material from the site.

Two bronze spurs have recently been found in the excavations at Bitterne (Clausentum) on the eastern side of Southampton⁴ (nos. 1, 2). Both are of the type which may be called Romano-British, having the usual hook and chiselled ornament round the heel-plate. All four rivets and both pricks are missing and so is one of the circular rivet plates on the sturdier of the two, but this spur has traces of iron where the prick should have been and in the surviving rivet hole. This spur from an occupation level in Building 2 can be dated archaeologically at not later than

¹ J. P. Bushe-Fox, *Richborough*—Third Report (1932), p. 79, no. 20 and pl. x, but the Zugmantel object quoted from *O.R.L.* xxxii, pl. xii, 106, is not a spur but part of a bridle-bit.

² L. Jacobi, *Das Römerkastell Saalburg*, p. 534. Jacobi also illustrates (p. 510, fig. 83) as Roman, buckles of recent date from the same site.

³ *Arch. Journ.* xiii (1856), 179, fig.; *Oxoniensis*, xiv (1949), 27, pl. III a; *V.C.H. Oxon.* i, 299, n. 6; Ashmolean Museum, R100, from the Rev. J. Gordon of Elsfeld, 1900.

⁴ M. A. Cotton, *Clausentum* (1958), p. 45, fig. 12, nos. 6 and 7.

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(fig.)

A.D. 370-90. It may, of course, be somewhat earlier. The other spur also from Building 2 is from a destruction level, not closely dated but certainly later than A.D. 390 and perhaps fifth century. The rivet plates are again circular, but the arms are longer, more slender, and of very different lengths. The spur was evidently worn on the left foot.

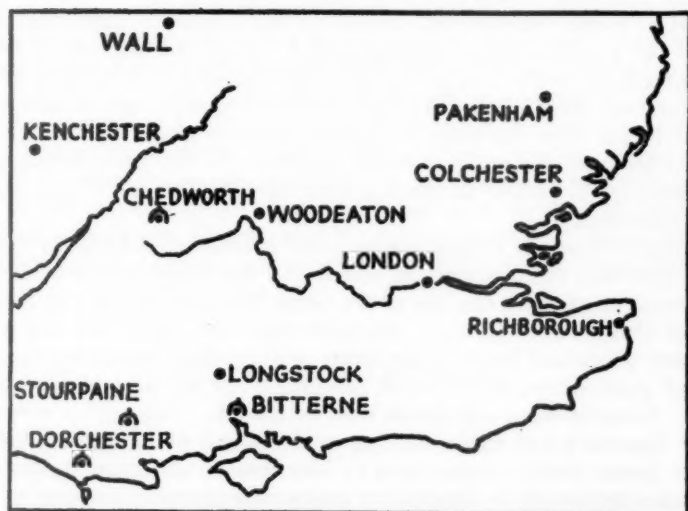
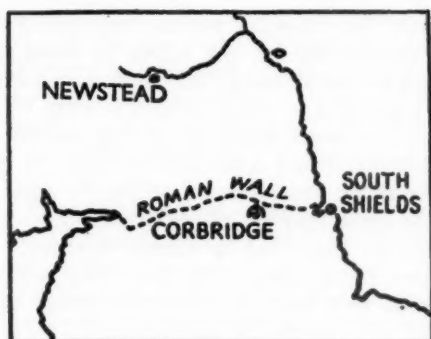


FIG. 5. Distribution of spurs of Roman date found in Britain.

A bronze spur, with iron point, not described in detail, but probably of Roman date, was found at Kenchester (Magnis) in Herefordshire¹ (no. 15).

A number of spurs have been found in the neighbourhood of Hadrian's Wall (fig. 5), of which the Newstead example has already been mentioned. The notable

¹ *Arch. Journ.* xiv (1857), 83.

fact is not that there should be such a group, geographically separated from those in the south, but that the concentration should be so slight. A milliary *ala* stationed for some 250 years across the river from Carlisle has left not a single spur for the Tullie House Museum, the cheek-piece of a cavalry helmet and two troopers' identity plates being the only equestrian equipment there, as Mr. Robert Hogg kindly informs me.

Cavalry units at Corstopitum have left no less than five spurs for the Corstopitum Museum (Corbridge) (nos. 6-10, fig. 3). Three of these are iron and the other two, from which the pricks are missing, are bronze. One of the iron examples is a hook-spur but of such simple manufacture, a strip of metal with the ends turned outwards and a square-sectioned prick hammered out from the centre, that one hesitates to attribute it to a continental origin. It is what any regimental smith might have made in an emergency. By Jahn's typology it should belong to the third century. The other four are all rivet-spurs and might have come from any Romano-British site in the third or fourth century. The two of iron are notable for their excellent preservation, only one stud being missing, while from the bronze all four studs and both pricks are missing and one of the arms is fractured.

One more iron spur of this type, but much altered by corrosion, comes from the Roman fort at South Shields and is now in the Museum there (no. 21, fig. 2). Nothing of the stud-plates remains, and only vestiges of the hook above the heel and the ornament beneath. The prick, being conical with a solid base, has survived. A register of finds kept in the Museum records the discovery of this spur on 1st July 1879. It was then compared to the Woodeaton spur.

Another iron spur of Roman date and probable British provenance is described and illustrated by J. James¹ as coming from the Chaffers collection, but the find-spot is not recorded.

Other finds of spurs in England have been considered Roman in date, but it is at least possible that the cemetery in which one was discovered was Anglo-Saxon. This was found in 1838 on the line of the Great Western Railway at Shooter's Hill just west of Pangbourne (Berks.), but the metal and form are not mentioned.² The cemetery contained interred skeletons, with pottery, spear-heads, battle-axes, and coins of gold, silver, and bronze, ranging from the time of Domitian to that of Gratian. None of these objects can now be traced.

Another discovery was made in 1830 in the parish of Langton (Dorset) on the property of James John Farquharson.³ This was an object of unspecified metal which 'appears to have been designed to answer the purpose of a spur and a stirrup, as part of a rowel was attached to it'. A skeleton lying in a cist cut in the chalk, covered with flat stones, the bones of a horse, a dog, and a child, several urns 'such as are usually found in barrows', various pieces of Samian and other pottery and glass, and an iron spear-head, completed the strange collection of objects which were

¹ *J.B.A.A.* xii (1856): J. James, 'On the Pryck-Spur', p. 217 n., pl. xxvii, no. 4.

² G. L. Gomme, *The Gentleman's Magazine Library—Romano-British Remains*, pt. i (1887)

p. 7, quoting *The Gentleman's Magazine* (1838), pt. ii, p. 650.

³ *Arch.* xxiii (1831), 415.

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disinterred at the same time, and which seem to include the products of an urn-field as well as a Roman grave. From the description, however, it seems inevitable to regard the object in question as what was more recently called a hippo-sandal.

On typological grounds one must also reject the two iron prick-spurs found at Woodchester (Glos.) and figured by Samuel Lysons¹ as Roman. The form of both of them is more in keeping with the twelfth or thirteenth century. Similarly, iron spurs in the Cirencester and Yeovil Museums, and even a fifth spur from Colliton Park, Dorchester (C2234 in the site register), though from Romano-British sites should probably be attributed to late Saxon times.

From this survey, the fact which emerges is the considerable rarity of spurs of Roman date in this country. I have not been able to discover more than twenty-eight, and of these five come from Hod Hill, in the parish of Stourpaine (Dorset), and five others from Corbridge (fig. 5).

It is possible, within broad limits, to date these spurs according to type. Three are non-Roman, that from Pakenham being in all probability of first-century date. The bronze spur from Colchester follows in the second. The iron hook-spur from Hod Hill, with close parallels from Salburg and Mainz, may be as late as the third, and the other hook-spur from Corbridge probably even later.

Two main classes of provincial Roman spurs occur in England. The first, dating from the first century, is often of rather flimsy construction and may be undecorated. It has loops for the strap and a tapering prick. It occurs in iron and bronze. To this class belong four of the five Hod Hill spurs and also those from Cheapside, Longstock, and perhaps Wall. The Kenchester example is uncertain. The second class is riveted instead of looped. It has a hook above the heel-plate and chiselled ornament. The prick is more elaborate, being often 'waisted' where it joins the heel-plate. The prototype in this country is the Richborough example, dated to the beginning of the second century, but derivatives from Bitterne, Chedworth, Corbridge, Dorchester, South Shields, and Woodeaton probably belong to the end of the third or the fourth, and it is these which form a distinctive Romano-British group.

APPENDIX I

Register of Romano-British Spurs

No.	Provenance	App. date	Metal, type, and description	Location
1	Bitterne	Late IV A.D.	Bronze rivet-spur with plain hook; iron prick and rivets missing; one arm broken.	Tudor House Museum, Southampton.
			<i>Clausentum</i> , p. 45.	
2	Bitterne	Late IV or V A.D.	Bronze rivet-spur; prick and rivets missing.	Tudor House Museum, Southampton.

Clausentum, p. 45.

¹ *Arch. Journ.* iv (1847), 65, quoting Samuel Lysons, *An Account of Roman Antiquities Discovered at Woodchester in the County of Gloucester* (London, 1797), pl. xxxv.

No.	Provenance	App. date	Metal, type, and description	Location	
3	Chedworth	III or IV A.D.	Bronze rivet-spur with plain hook; prick missing.	Chedworth Museum.	Fig. 2, pl. xv
4	Chedworth	III or IV A.D.	Bronze rivet-spur with plain hook.	Chedworth Museum.	Fig. 2, pl. xv
5	Colchester	? II A.D.	Bronze stud-spur.	Not known.	Fig. 3
<i>P.S.A.L. 2nd ser. iii (1867), 422.</i>					
6	Corbridge	? IV A.D.	Iron hook-spur.	Corbridge Museum.	Fig. 3
7	Corbridge	III or IV A.D.	Bronze or brass rivet-spur with plain hook; prick and rivets missing; one arm broken.	Corbridge Museum.	Fig. 3
8	Corbridge	III or IV A.D.	Bronze rivet-spur with plain hook; prick and rivets missing.	Corbridge Museum.	Fig. 3
9	Corbridge	III or IV A.D.	Iron rivet-spur with plain hook; one rivet missing.	Corbridge Museum.	Fig. 3
10	Corbridge	III or IV A.D.	Iron rivet-spur with plain hook.	Corbridge Museum.	Fig. 3
11	Dorchester	III or IV A.D.	Iron rivet-spur with plain hook.	Dorset County Museum.	Fig. 3
12	Dorchester	III or IV A.D.	Iron rivet-spur with plain hook; one arm broken.	Dorset County Museum.	Fig. 3
13	Dorchester	IV A.D.	Iron rivet-spur with plain hook.	Dorset County Museum.	Fig. 2
14	Dorchester	? IV A.D.	Iron.	Dorset County Museum.	
15	Kenchester	?	?	Not known.	
<i>Arch. Journ. xiv (1857), 83.</i>					
16	London (Cheapside)	?	Iron loop-spur plated with bronze.	London Museum.	
<i>London in Roman Times, p. 151.</i>					
17	Longstock	? I A.D.	Bronze loop-spur.	Salisbury Museum.	Fig. 1, pl. xv
<i>Salisbury Museum Report (1955), p. 11.</i>					
18	Newstead	? III A.D.	Bronze stud-spur; one arm broken.	National Museum of Antiquities, Edinburgh.	
<i>P.S.A. Scot. 5th ser. iii (1917), 232-3.</i>					

A PROVINCIAL ROMAN SPUR

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No.	Provenance	App. date	Metal, type, and description	Location	
19	Pakenham	? I A.D.	Bronze rivet-spur; zoomorphic ornaments have opaque blue glass eyes.	Ashmolean Museum, Oxford.	Fig. 2, pl. xv
<i>Arch. Journ.</i> i (1844), 246; <i>J.B.A.A.</i> iii (1848), 119.					
20	Richborough	Early II A.D.	Bronze rivet-spur with damaged hook; traces of prick and rivets of iron.	Ministry of Works Museum, Richborough.	
<i>Richborough</i> , iii, 79.					
21	South Shields	III or IV A.D.	Iron rivet-spur with hook and rivet-plates missing.	South Shields Museum.	Fig. 2
22	Stourpaine	? III A.D.	Iron hook-spur.	British Museum.	Fig. 4
23	Stourpaine	? I A.D.	Bronze loop-spur; prick missing.	British Museum.	
<i>History of the Spur</i> , p. 23.					
24	Stourpaine	I A.D.	Bronze loop-spur (horizontal loops).	British Museum.	
<i>British Museum Guide to Roman Britain</i> (1951), p. 50, fig. 23.					
25	Stourpaine	? I A.D.	Iron loop-spur (horizontal loops).	British Museum.	Fig. 2
<i>Ancient Dorset</i> , p. 156.					
26	Stourpaine	? I A.D.	Iron loop-spur (horizontal loops).	British Museum.	Fig. 2
<i>Ancient Dorset</i> , p. 156.					
27	Wall	I A.D.	Bronze or copper loop- or rivet-spur.	Ministry of Works Museum, Wall.	Fig. 2
28	Woodeaton	III or IV A.D.	Bronze rivet-spur with plain hook and iron prick.	Ashmolean Museum, Oxford.	Fig. 2, pl. xv
<i>Arch. Journ.</i> xiii (1856), 179; <i>Oxoniensia</i> , xiv (1949), 27.					

APPENDIX II

Site Register of Provincial Roman Spurs on the Continent (fig. 6)

No.	Provenance	Metal, type, and description	Location
I	Caporetto	Rectangular strap-plates. Bronze.	Trieste Museum.
Jahn, <i>op. cit.</i> , p. 119; Zschille-Forrer, <i>op. cit.</i> ii, pl. xxii, 1.			

No. Provenance

2 Corinth

Metal, type, and description

Rectangular strap-plates. Bronze.

Location

Zeughaus, Berlin.

Jahn, p. 119; Zschille-Forrer, ii, pl. xxi, 22.

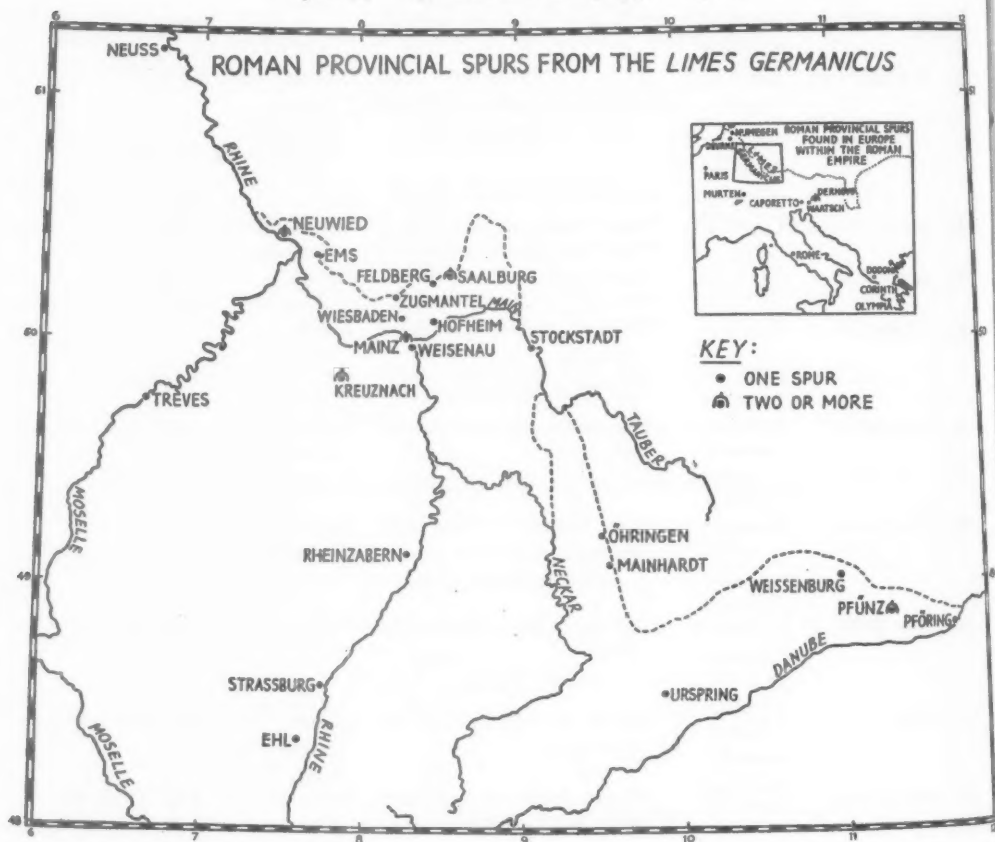


FIG. 6.

No. Provenance

Metal, type, and description

Location

3 Dernovo (Drnovo)
(Carniola)

Two rivet-spurs, one bronze, one iron.

Jahn, p. 120; cf. Landesmus, *Laibach*, pl. lv, 8.4 Deurne, Holland,
from the PeelBronze stud-spur with hook above the
heel-plate.

Leiden Museum.

Oudheidkundige Mededeelingen, v (1911), 149, pl. 65.

5 Dodona

Rectangular strap-plates. Bronze.

Jahn, p. 119; Olshausen, *Zeitschr. für Ethn.* (1890), p. 203.

No.	Provenance	Metal, type, and description	Location
6	Ell (Ehl) (Alsace)	Bronze rivet-spur with hook above heel-plate. Prick missing. <i>Mémoires de L'Académie royale de Metz</i> (1839), p. 295, pl. 1, 16.	
7	Ems	Iron with short 'prismatic' prick. <i>O.R.L.*</i> iv (1912), 26.	
8	Feldberg	Iron. <i>O.R.L.</i> x (1905), 31.	
9	Hofheim	Iron with circular loops. Jahn, p. 119; <i>Nassauer Annalen</i> , xl (1912), 180, no. 25.	Wiesbaden Museum.
10	Kreuznach	Rectangular strap-plates. Bronze. Jahn, p. 119; <i>Zschille-Forrer</i> , ii, pl. xxi, 21.	Zeughaus, Berlin.
	Kreuznach	Bronze with silver rivets; prick missing, hook above. Jahn, p. 119, fig. 82; <i>Zschille-Forrer</i> , ii, pl. xxii, 3, and i, pl. ii, 3.	Zeughaus, Berlin.
	Kreuznach	Bronze rivet-spur with iron prick. Jahn, p. 119; <i>Zschille-Forrer</i> , i, pl. ii, 2.	Zeughaus, Berlin.
11	Mainhardt	Iron; long prick, straight. <i>O.R.L.</i> xliii (1909), 12.	
12	Mainz, in the Rhine at Dimeser Ort	Iron with circular loops. Jahn, p. 118; <i>Lindenschmit, Altert. uns. heidn. Vorz.</i> ii (1870), pt. 1, pl. vii, 7.	Mainz Museum.
	Mainz, Schillerstrasse	Iron with circular loops. Jahn, p. 118, fig. 74; <i>Altert. uns. heidn. Vorz.</i> ii, pt. 1, pl. vii, 4.	Mainz Museum.
	Mainz, in den römischen Gebäuderesten auf dem Linsenberge bei Mainz	Bronze, very small eye-hole and stirrup-like plate underfoot. <i>Altert. uns. heidn. Vorz.</i> ii, pt. 1, pl. vii, 6.	
	Mainz	Bronze hook-spur. <i>Westd. Zeitschr.</i> xviii (1899), pl. vii, 13.	
	Mainz	Iron hook-spur with four-sided prick. <i>Lindenschmit, Sigmaringen</i> (1860), p. 36, fig. 22.	
13	Murten (Switzerland)	Iron rivet-spur, a third rivet on a vertical arm above the prick. Jahn, p. 120, fig. 84; <i>Zschille-Forrer</i> , i, pl. ii, 5.	Zeughaus, Berlin.
14	Neuss	Bronze stud-spur. <i>Bonner Jahrbücher</i> , 111/112 (1904), 372, pl. xxx A, fig. 30.	

* *Der obergermanisch-rätische Limes des Römerreiches.*

No.	Provenance	Metal, type and description	Location
15	Neuwied	Bronze with long eccentric prick and three rivets. Ditto with two rivets.	
		Dorow, <i>Rom. Altert. in und um Neuwied am Rhein</i> (1826), p. 108 and <i>Atlas</i> (1827), pl. xxv, 2 and 3.	
16	Nijmegen	Bronze spur.	In the Municipal Collection of the Rijksmuseum G. M. Kam at Nijmegen.
		<i>Verslag Gem. Mus. Nijmegen</i> (1900), pp. 1 and 9, no. 20.	
17	Öhringen	Iron; straight prick, very small loop. <i>O.R.L.</i> xlii (1897), 18, pl. II, 5.	
18	Olympia	Rectangular strap-plates. Bronze. Jahn, p. 119; Olshausen, <i>op. cit.</i> , p. 203.	
19	Paris, in the Seine	Bronze rivet-spur with silver inlay. Jahn, p. 119, fig. 83; Zschille-Forrer, i, pl. II, 11.	Zeughaus, Berlin.
20	Pföding	Iron; short prick. <i>O.R.L.</i> lxxv (1902), 17.	
21	Pfünz	Three of iron, one loop, long prick, one rivet, short prick, one, Merovingian. <i>O.R.L.</i> lxxiii (1901), 26, 40, and 74, pl. v, 36, 37.	
22	Rheinzabern	Bronze rivet-spur with hook above prick. Jahn, p. 119; Lindenschmit, <i>art. cit.</i> ii, pt. 1, pl. VII, 2.	
23	Rome (near)	Rectangular strap-plates. Bronze. Jahn, p. 119, fig. 78; Zschille-Forrer, ii, pl. XXI, 23.	Zeughaus, Berlin.
24	Salburg (Saalburg)	Bronze hook-spur with four-sided prick. Lindenschmit, <i>op. cit.</i> , p. 36, fig. 22.	
	Salburg	Bronze, very large with a diminutive prick. Pierced strap-plate on one side, part of ? hinge on the other. Lindenschmit, <i>op. cit.</i> , ii, pt. 1, pl. VII, 8.	
	Salburg	Two similar objects with attached rivets, with keyhole slots where pricks should be, all three considered by Jacobi to be the framework of leather helmets. Another from Mainhardt is in <i>O.R.L.</i> xliii (1909), 12, fig. 3. Jacobi, <i>Das Römerkastell Saalburg</i> (1897), pl. LX, 1-3.	

No. Provenance	Metal, type, and description	Location
24 Salburg (cont.)	Iron hook-spur, very small prick. Jacobi, <i>op. cit.</i> , pl. xli, 4.	
Salburg	Twelve iron prick-spurs, very doubtful date, some probably medieval. None is unquestionably of Roman date. Jacobi's rowel-spur has been referred to above, p. 66 (Jacobi, <i>op. cit.</i> , fig. 87, 4). Jacobi, <i>op. cit.</i> , pl. xli, 1-3, 5-7 and fig. 87, 1-3, 5-7.	
25 Stockstadt	Iron (? loop). O.R.L. xxxiii (1910), 56, pl. ix, 28.	
26 Strassburg	Iron with circular strap-plates. Jahn, p. 119; <i>Elsässischer Anzeiger</i> (1919), pl. xxii, T.	Strassburg Museum.
27 Trèves	Bronze rivet-spur with missing iron prick. Jahn, p. 119, fig. 81; Zschille-Forrer, i, pl. ii, 1.	Zeughaus, Berlin.
28 Urspring	Iron; loop; straight prick. O.R.L. lxvi a (1905), 36.	
29 Waatsch (Carniola)	Bronze with circular holes for strap. Jahn, p. 119, fig. 75; Zschille-Forrer, ii, pl. xxi, 20.	Vienna Museum.
30 Weisenau	Bronze with short four-sided prick and circular strap plates. <i>Westd. Zeitschr.</i> xviii (1899), pl. vii, 12.	
31 Weissenburg	Iron; rivet; short prick. O.R.L. lxxii (1906), 40, pl. viii, 75.	
32 Wiesbaden (near)	Rectangular strap-plates. Bronze. Jahn, p. 119, fig. 80; <i>Altert. uns. heidn. Vorz.</i> ii, pt. 1, pl. vii, 3, and Olshausen, <i>Zeitschr. für Ethn.</i> (1890), p. 198.	Wiesbaden Museum.
33 Zugmantel	Iron; unusual form. O.R.L. viii (1909), 189.	

Jahn also lists sixteen sites outside the Roman Empire where rivet-spurs have been found, pp. 119 (Stradonitz), 120, 121. See also W. Schulz, *Leuna* (1953), pls. x, 1, xiii, 3, xviii, 6, and xxxi, 1.

ACKNOWLEDGEMENTS

The map of the *Limes Germanicus* is based on *Tabula Imperii Romani. M. 32, Moguntiacum*. Professor Gerhardt Bersu, Hon. F.S.A., kindly gave me many of the references to Roman spurs on the Continent and the number was increased by Dr. W. D. van Wijngaarden of Leiden and Dr. H. J. H. van Buchem of Nijmegen.

I am indebted to the following Curators for permission to publish or republish spurs from the collections in their charge: Mr. John Brailsford and the Trustees of the British Museum; Mr. W. Bulmer (Corbridge); Mr. R. F. Dalton and his Committee (Dorchester); Dr. D. B. Harden (the Ashmolean Museum Oxford, and Chedworth); Mr. P. S. Peberdy (Southampton); Mr. R. B. K. Stevenson (The National Museum of Antiquities, Edinburgh); and Mr. J. S. Swan and his Committee (South Shields).

For much additional information I have to thank Mr. E. A. Batty, Mr. George Boon, Mrs. Cotton, Mr. G. C. Dunning, Mr. R. A. H. Farrar, Mr. Robert Hogg, and Dr. David Smith. Mrs. M. E. Cox has drawn or re-drawn the maps and most of the spurs, but the Longstock spur was drawn by Mr. S. H. Gill and the hook-spur from Hod Hill by Mr. C. O. Waterhouse, M.B.E. To all these and other helpers not mentioned by name, I express my warm thanks.

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EXCAVATIONS OF ERMINE STREET IN LINCOLNSHIRE

By CHARLES GREEN and P. A. RAHTZ

I. AT STAMFORD IN 1956

By CHARLES GREEN

THE course of the Roman road from London to York, today known as Ermine Street, is well attested. Much of it underlies our comparable modern trunk road, the Great North Road (A1), but there are many deviations. To review the East Midland sector, the modern road covers approximately the Roman road from Huntingdon to the south-east gate of the walled town DVROBRIVAE at Water Newton. Here the modern road bears more to the west and leaves the Roman line. This passes through the ancient town as its main street, crosses the river Nene and continues in the same line until, at a point some three miles south-east of Stamford, it bears more westerly, running west-north-west through Burghley Park. It crosses the Great North Road on the western boundary of the park, where it was exposed in 1732 and seen by Stukeley (1883, ii, 269). From this point its course alters to north-west and, after crossing the river Welland, it underlies a suburban road in the western part of Stamford and crosses the Empingham (Oakham) road (A606). North of this it is seen as a boldly-upraised ridge crossing several fields diagonally until, some three-quarters of a mile south-east of Great Casterton, it joins once again the line of the Great North Road and runs parallel to and immediately adjoining the south side of the modern roadway.

In 1956 one of these fields between the Empingham road and Great North Road, just within the Stamford boundary, was chosen as the site for a new school. The plans included the destruction of that part of the *agger* which crossed the north-east angle of the field. The opportunity to cut a section through the road at this point was taken by the Ministry of Works, with the consent of the owner, the Marquess of Exeter, and the tenant, Mr. G. C. Hinch of Holme Farm, Tinwell. In 1939 Margary drew attention to the very wide spaces between the boundary-ditches of Roman main roads in various parts of the province and the air-photograph, later published by him (1955, pl. xiv), reveals similarly-spaced ditches in the very field where this excavation took place. To demonstrate this spacing, cross-trenches totalling 96 ft. in length were cut. On the north-east side of the roadway, however, as is seen in the photograph (pl. xvi), the ditch appears to be obscured in places and it happened that the cut section coincided with one of these breaks in the continuity of the ditch, and showed it to have been caused by later disturbance of the ground. The accompanying section-drawing (pl. xviii), therefore, omits the more northerly portion of the section exposed.

THE EXCAVATION

A line was stretched between pegs placed at the apparent centre of the *agger* close to each hedgerow and the digging-line was squared off from this central line

at 75 ft. from the eastern hedgerow. Trenches 4 ft. wide and 12 ft. long were dug alternately on either side of this cross-line, so that, in addition to a continuous cross-section, a number of 8-ft. longitudinal sections would be visible, including one at approximately the road-centre. As however the highest point of the ridge overlay approximately the southern edge of the actual road surface, the two longitudinal sections reproduced (pl. xviii) lie in the sides of the roadway.

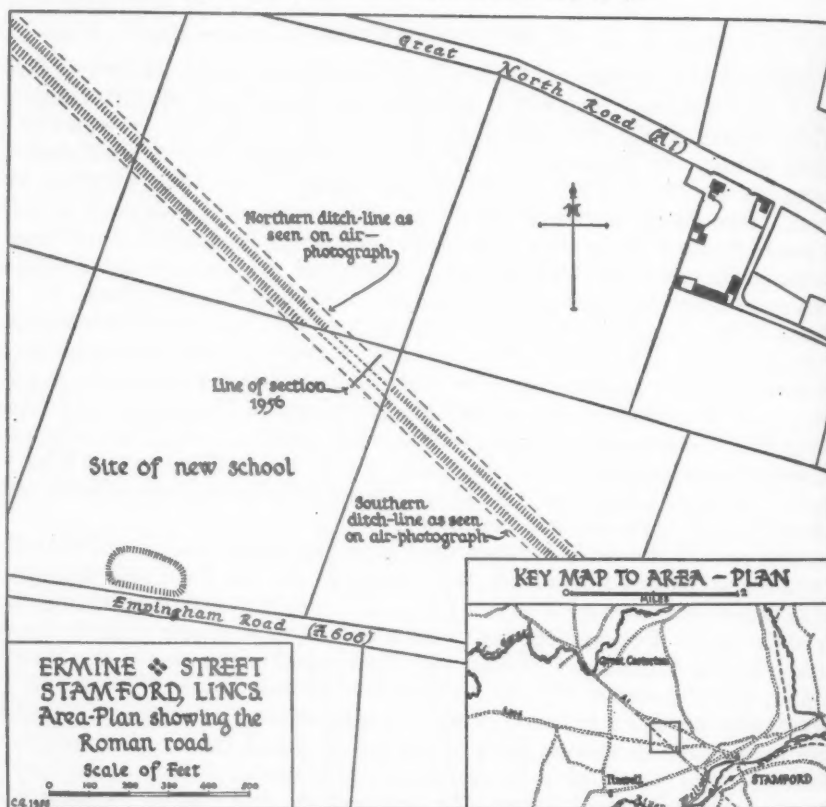


FIG. 1.

The natural subsoil at this point is a boulder clay. On the south side of the roadway it was of a reddish-brown colour and contained many small 'erratics' of limestone. Test-borings in the southern part of the field on the site of the school-building showed samples of this clay at *circa* 2½ ft. below the surface.¹ On the northern side of the roadway, however, the reddish-brown colour of the clay matrix paled within a few feet to a cream colour which persisted to the northern end of the section.

¹ Information from Mr. Edward Craven, A.R.I.B.A., M.T.P.I., Schools Architect.



Photo: J. K. St. Joseph . Crown Copyright reserved

Air photograph of Ermine Street between the Empingham Road (left foreground) and the Great North Road (right background); the Roman town of Great Casterton (top right). The excavated section lies in the centre of the photograph



Section through the *agger*, looking south-west

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Resting on a surface of undisturbed boulder clay was a layer of limestone rubble some 21 ft. wide. Its median thickness was about one foot and it tapered down to a few inches on either edge. The thicker middle part also contained some clay packing. On this rubble foundation lay a compact mass, with a greatest thickness of some 2½ ft., of 'lime-cement', reinforced in places with lines of flagstones. This cement was extremely hard and could only be broken with a pick-axe by the slow removal of small flakes. It showed no true stratification in its structure, the lines of flagstone packing providing the only visible subdivisions in an otherwise homogeneous texture. It was evident, however, that repairs and reconstructions had been made from time to time.

In the centre of the agger, at about half its total height from the rubble foundation, was the outline of a 'pothole' which had been carefully repaired with rammed limestone reinforced with small flagstones, some 3 in. long, which revealed clearly the shape of the hollow. Over this repair lay a line of flagstones extending to the very edge of the foundations on the south side, but cut off more abruptly to the north. Above this line, later additions of rammed limestone flanged out on the south side to overlie an earlier accumulation of fawn clay-loam, the end of which rested on the earlier repair-work. This loamy clay appears to have been a natural accumulation of road-wash and disturbed clay, an inference supported by its overlying the upcast boulder clay from the boundary ditch on this side (see below). Loamy accumulations, of similar texture but lighter colour, overlapped the later road-structure on this side, darkening in the higher levels which were demarked by pebble-lines.

The upper true road surface, some 12 ft. wide, still carried on its southern half the remains of a layer of small limestone 'pebbles' which appeared to be the surface top-dressing. This top-dressing was not of river gravel, but was composed of broken limestone chippings, the edges of the 'pebbles' being comparatively sharp and certainly not waterworn. Close to the edge of the agger, resting on the later loam, was a lens of similar limestone fragments and small nodules, apparently a portion of this top-dressing which had been dislodged from the road surface.

The boundary ditch on the south side lay with its centre some 42½ ft. from the centre of the roadway. It was a V-shaped cutting some 4½ ft. wide and 1½ ft. deep below the level of the boulder clay surface. It was filled with a flaky rain-washed clay-silt, archaeologically sterile. The ditch does not appear to have been used for drainage purposes, but should be regarded as the southern boundary of the 'highway zone'. The approximate overall breadth of this 'highway zone' must therefore have been some 84 ft., a width inferred by Margary (1939, p. 55), from examples he quotes in Dorset, Sussex, and Surrey, as that for roads of this class.

Pressed into the surface of the boulder clay close to the southern edge of the agger were a few scraps of pottery of 'native' type. They suggest that, in the preliminary stages of road-building the surface was cleared to the natural clay, as is confirmed by the position of the ditch-upcast and the superimposed loam layer which overlaps the flange of the agger. These sherds were probably dropped at the time of construction and so tend to confirm its early date.

The lack of symmetry in the construction of the agger, evidenced by the profile-differences and the 'construction-lines', is of interest. It will be seen from the

section-drawing that the north side descends much more abruptly and that the upper 'construction-lines' do not bend down to the original foundation as they do on the south side. On this north side also, there are indications of the top-dressing of the earlier surface which covered the repaired pothole. Furthermore, the flanges of the rammed limestone do not overhang the underlying rubble foundation, evidence perhaps of an originally looser texture and consequent settlement on the south side. But this is unlikely. It is more probable that the later disturbance which destroyed the northern boundary ditch extended as far south as the agger and cut away a small part of it. This is probably confirmed by the superimposed strata, the 'mixed brown loam' being more 'earthy' in texture and colour than the corresponding deposits on the south side. This mixed loam, with little variation, also extends downward from the base of the modern plough-soil to the earlier accumulation over the natural clay at the base of the *agger*. Low in this mixed brown loam, at some 27½ ft. from the road-centre lay a sherd of unglazed Stamford ware of Saxo-Norman date (fig. 2) and close by was also found a very worn scrap of Castor ware. Over the approximate line of the northern ditch there was much later evidence of disturbance, for here, some 3 in. above the surface of the boulder clay, was a glass decanter-stopper of late-eighteenth-early-nineteenth-century type. Apart from these significant sherds, finds were limited to a few post-medieval sherds and other fragments from the top-soil and a few worn sherds of medieval type from layer 2 to the south of the roadway.

At the time of the excavation, repairs were being made to the Great North Road at various points in its Rutland sector, and the County Surveyor was able to demonstrate that a similar structure of rammed limestone rubble with reinforcement was apparent wherever the old road was exposed in this length of some 6 miles north-west of Great Casterton. It would seem that, on being suitably rammed, this limestone compacts into a homogeneous mass, the 'lime-cement', and all trace of the original granular structure is lost. It is also of interest to note that the section, briefly described by Stukeley (*op. cit.*) in his letter of 30th September 1732, showed a similar construction.

Confirmation of the 84-ft. width of the 'highway-zone' of Ermine Street seems to be available from other parts of its length. In 1956, while working at Ancaster, Lincolnshire, the site of the last walled Roman town to the south of Lincoln, the present writer had occasion to survey the contiguous parts of Ermine Street, which here underlies a modern secondary road (B6403) both to the north and south of the present-day village, though a slight deviation was noted through the village itself and for a few hundred yards on either side. Where, outside the village area, the two roads coincide, the distance between the boundary hedges was approximately 80 ft., a broad grass verge being present on either side of the roadway.

It may be suggested that, in Roman days, this broad verge had both immediate utilitarian and general strategic value. The 12-ft. roadway of hard limestone was ill-adapted to the passage of troops of cavalry. Strategically, cavalry on the march could better maintain a military formation in a broad zone while, from the utilitarian point of view, travellers on horseback, as opposed to driving, would in reasonably dry weather better maintain the condition of their horses' feet by using the verge rather than the roadway.

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Thanks are due to the Marquess of Exeter and to Mr. G. C. Hinch for permission to excavate, to Mr. Hinch, to Canon Hoskins of Stamford, to Mr. L. Tebbutt, Borough Librarian of Stamford, to Mr. E. Craven, architect of the new school, to Mr. W. Brick of Messrs. Brick and Sons, contractors to the Ministry of Works, to Dr. Philip Corder and to Mr. D. F. Petch of the Lincoln Museum, for help given in various ways.

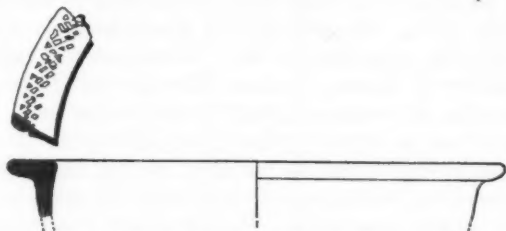


FIG. 2. Sherd of unglazed Stamford ware. ($\frac{1}{3}$)

THE FINDS

Of the few sherds and other fragments found, the only one worthy of description is the rim-sherd of Stamford ware.

Fig. 2. Fragment of rim and side of flanged bowl of unglazed cream-coloured paste. The rim-flange is decorated with a simple rouletted pattern. This is a characteristic example of the ware now known as 'Stamford' ware and, on our present knowledge, may be dated to the period A.D. 900-1100. Cf. Dunning (1936), fig. 4, and Hurst (1958), for a general survey of this ware.

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II. AT SCAMPTON IN 1955

By P. A. RAHTZ

ERMINE STREET is one of the best-known Roman roads in Britain, and the length of over thirty miles on the limestone plateau from Lincoln to the Humber is one of the most impressive, raised on a substantial *agger*, which now carries the A15 trunk road for much of its length.

When, in 1955, the extension of the runways of Scampton Airfield was proposed, there was considerable public protest over the destruction of half a mile of this road; alternative schemes were suggested which would preserve it, but none was found practicable, and the road was diverted in November 1955: arrangements

were made for archaeological examination and four cuttings were made at intervals through the part to be destroyed (fig. 3). Here the ground slopes slightly down from west to east and the present road-level was from 3 to 4 ft. above the general field-level. The road is 16 ft. wide where it leaves the Newport Arch, Lincoln, and at Scampton the modern tarmac road is 21 ft. wide on a bank 60 ft. wide from hedge to hedge.

I would like to thank Mrs. E. A. Rudkin, of Willoughton, and F. T. Baker, F.S.A., of Lincoln Museum, for their help and advice in the preparation of this report, and L. Biek, B.Sc., director of the Inspectorate's laboratory,¹ for his comments on soil samples submitted to him. The work was carried out under the auspices of the Ministry of Works, Ancient Monuments Division; four men were employed for two weeks; they were assisted by mechanical help.

Four sections were cut in the 800 yds. to be destroyed. Their positions were quite arbitrary, but as evenly spaced as possible, having regard to obvious modern interferences, the position of the actual runway, and the areas being worked on by the contractor at the time of excavation. The macadam was removed mechanically from all sections in a 5-ft. wide strip. The two outer sections (A and D) were cut by a mechanical 'back-actor' as far as cables allowed; these sections were dressed back and continued by hand. In the two middle sections the road surface was stripped in layers but not completely removed, and the sides of the agger partly sectioned. Only in the case of the most northerly section (A) was it possible to obtain a continuous section of the east side of the agger, as bulldozers had destroyed the rest before excavation began, to remove the old water pipes alongside the road.

Two sections only are published here (A and D). Differences between these and the other two are commented upon.

In all cases it was possible to identify the Roman agger, of varying materials and build-up. On these are at least three hard road surfaces including the present one, but none of these can be identified as Roman. A remarkable feature are the thick layers of road dust on the banks of the agger, probably mainly of post-Roman date. The only finds were two sherds and a piece of bone in a probable post-hole sealed under the west side of the agger.

There is no reason to suppose that either of the roadside ditches seen in the present cuttings is ancient. A trench 60 ft. long and 2 ft. wide was dug by hand eastwards from the edge of the agger in section A, but no sign of any flanking ditch was seen in this or in any of the contractors' disturbances on either side of the road.

KEY TO SECTIONS A AND D AND SUGGESTED INTERPRETATION² (pl. xviii)

- A Loose limestone brash and brown soil (filling of recent water main trench dug to replace that in agger).
- B Turf and brown top soil (top soil of normal profile).
- C Loose dark brown soil with some stone dust (filling of fairly recent roadside ditch).
- D Loose root-disturbed dusty top soil (recent humus growth and roadside dirt on east side of bank, after cessation of stone dust accumulation, probably since modern surfaces were laid).
- E Creamy-buff sandy soil (possibly residue of upcast of roadside ditch).

¹ Ancient Monuments Division, Ministry of Works. Mr. Biek, whose comments are included under the prefix L.B.

² Samples of some layers were submitted to

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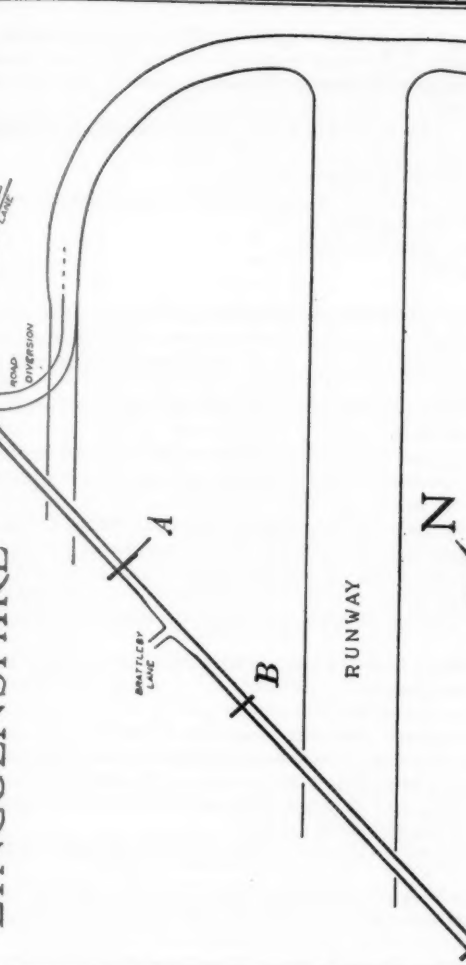


FIG. 3.

- F Cream-grey sandy stone dust, grit, soil, and small stones, laminated (result of road friction, probably mainly post-medieval and pre-modern). (L.B.—possibly up to 50 per cent. of organic material.)
- G Pale grey fine stone dust (primary version of F, possibly Roman, the result of friction of the original paved surface). (L.B.—carbonate dust.)
- H Hard compact buff-brown sandy soil (eastern layer of Roman agger—distinguishable from R in this place, but not elsewhere). (L.B.—some organic material in this layer.)
- J Loose buff sandy soil (probably animal disturbance).
- K Grey-brown dusty soil (final stage of road friction or upcast from insertion of secondary pitching).
- L As H, but streaked with buff-yellow (agger make-up).
- M As K, but more yellow (packing of secondary pitching).
- N Dirty grey-brown soil (recent rainwash).
- O Light grey-buff sandy soil (as M).
- P Grey-buff compact sand, with yellow-brown rusty concretion or 'pan' at base, on surface of Roman agger; darker and dirtier in ruts (probably compacted rainwash in ruts of pre-macadam road, with a more accentuated dip on the west side of the east rut). (L.B.—darkness of sand organic, *not* derived from iron.)
- R Soft brown sandy soil, distinct from H in this section, but not elsewhere (agger make-up).
- S Slag and cinder (make-up of modern road).
- T Bluish rammed stone and quartzite pebbles (first modern surface—earlier than present tarmac).
- U Rammed small stone, buff clay and quartzite pebbles (probably make-up of first modern road).
- V Yellow sandy soil streaked with brown (agger make-up).
- W Limestone brash with sandy soil matrix: layer of 'dried peas' on west side (western layer of agger).
- X Dirty gritty buff soil, clayey and laminated to east (roadside dirt and rainwash of macadam road).
- Y Limestone brash and reddish-brown clayey soil, merging into banded limestone to west (natural).
- Z Grey limestone brash, grey sandy matrix (weathered surface of bedrock less weathered under Y).
- AA Red-brown clayey soil (possibly remnant of pre-agger soil, much compressed). (L.B.—possibly old soil, not definite.)
- BB Dirty grey-buff dusty soil (fairly recent humus and roadside dirt on west side of bank, similar to D).
- CC Stone chippings and gritty soil (recent dump).
- DD Slightly stony brown soil, merging to normal top soil to west.
- EE Ginger-brown compact sandy soil with some stone (this becomes an intermediate thin layer between the top soil and weathered bedrock to the west; as the ground is higher this side, this layer is probably an accumulation of soil in post-Roman times against the west side of the agger, possibly assisted by cultivation and the prevailing west wind; no such layer has accumulated on the lower east side, where its place is taken by wind-blown and rainwashed stone dust).
- FF Grey-buff stone dust (probably of similar derivation to F; lying on post-Roman soil accumulation EE, and limited by roadside wall).
- GG Loose stony soil with some limestone blocks, root disturbed (destroyed and robbed-out roadside wall: in section B its foundation was intact, and was 2 ft. 6 in. wide, and clearly contained layer FF on its east side, here more pronounced).
- HH Dark blue-grey rammed stone—additional layers in section D (make-up of present road).
- JJ Buff-yellow and bluish rammed stone and clay with quartzite pebbles (make-up of present road).
- KK Limestone lumps in laminated buff clayey soil, east end of (X) in A (rainwash and disintegration of macadam road).
- LL Rammed heavy angular limestone and buff clay, looser to west of dotted line (agger make-up). (L.B. very little organic material, mainly subsoil.)
- MM Buff-grey pale sandy clay (agger make-up). (L.B.—very little organic material.)
- NN Angular brash and buff clay (agger make-up).
- OO As AA with more broken limestone (disturbed pre-agger soil).
- PP Compact small brash and sandy brown soil (agger make-up).
- RR Compact brown dusty sandy soil (possibly top soil of layer EE).
- SS As RR but stonier (as RR with disintegrated road material).
- TT Dusty gravelly soil (roadside dirt of modern road).
- UU Brown soil (recent clean soil growth).

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Key to Section A

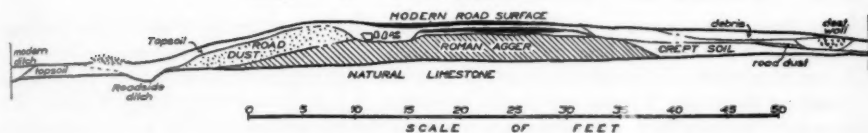


FIG. 4.

DETAILED DESCRIPTION (fig. 4 and pl. xviii)

Phase I. Roman

The agger of the Roman road is 41 ft. wide from tail to tail in section A. A possible pre-agger soil (AA) could be distinguished in places, but had perhaps been removed on the east side. It was very thin in section A, but almost 10 in. thick in D. The maximum height of the present agger above the weathered bedrock is 2 ft. 6 in. in section A, and 3 ft. in D.

Two features were sealed by the agger, both shown in section D: 1. A small *pit* or *post-hole*; the make-up layer PP clearly dips into the hole, which is thus likely to be little, if at all, earlier than the agger. Its filling was of clean reddish soil with some broken limestone, and yielded two sherds and a fragment of bone.¹ One sherd, deep in the hole (no. 1) is of coarse, shelly black fabric with a brown interior surface, and hand-made; it is roughly $\frac{3}{4}$ in. square and $\frac{1}{2}$ in. thick. It could be of Iron Age date. The other (no. 2) is Roman, in hard, wheel-made dark grey fabric $\frac{1}{4}$ in. thick with fine shell and brownish surfaces. The feature is most likely to be a post-hole, possibly connected with the construction or survey of the road. 2. A *bluish vertical patch* 6 in. in diameter, extending down through layer OO (probably disturbed pre-agger soil, slightly lighter to its west). Experience on other sites² has shown that a bluish tinge can be associated with soil in which wood has been left to rot.³ This feature may therefore represent a post which was driven into the old soil and its stump left in position when the agger was constructed.

The agger was piled up, apparently from the east, in layers of sandy soil, clay and broken limestone of various colours and textures as shown in the sections: all these materials are represented in the subsoils and rock surfaces adjacent to the road, but no definite quarry-scoops were seen in this length. The eastern side of the agger was composed of less stony material than the west side, which may have been partly responsible for the later rutting.

From comparison with earlier accounts it is clear that this part of Ermine Street was originally well paved for a width of 14–20 ft., as seen at Ingham Lane End not far from the present sections. No trace of such a paving was seen in any of the sections here described, and the next phase in the history of the road must have taken place after the paving of this section had been removed or had disintegrated. To the initial phase of Roman use of the road may be attributed layer G in section A, a fine stone dust, possibly derived from the Roman paved surface, and very slight by comparison with layer F, which follows.

¹ Kindly identified by Miss I. E. King, British Museum (Natural History), as the lower end of humerus of Red Deer.

² See Humberstone, Leicester: publication forthcoming.

³ Mr. Biek comments that in this case the bluish patch has less organic content than the soil on either

side, but a higher iron content, which may perhaps be an indication of a higher organic content originally; the figures are not, however, conclusive on these points.

⁴ G. R. Walshaw, and F. T. Baker, 'Roman Ermine Street: recent evidence in North Lincolnshire', *Lincolnshire Magazine*, iii, 76–78.

Phase II. Post-Roman (mainly post-medieval)

In the absence of a paved or metalled surface, disintegration of the agger must have been considerable, and it is uncertain how much of the height of the agger has been lost in this way. A severe rut developed on the east side nearly 6 ft. wide, with apparently a secondary rut nearer to the crown of the road. A lesser rut is seen in section A 8 ft. to the west, and 3 ft. wide. The deeper eastern rut may be due to subsidence caused by the less compact nature of the agger on this side, perhaps helped by the down slope of the land here from west to east, and by the prevailing westerly winds. The disintegration of the agger surface is vividly represented by layers F and FF, thick grey-white stone dust and grit. Like G, the lowest layer of stone-dust, they are mainly on the east side of the agger, which may again be attributed to the west wind. In the ruts was a compact 'rainwash' (layer P); at its base in places was a thin layer of rusty-looking concretion, described on the section as 'iron pan', but which Mr. Biek suggests is most likely to be of organic origin.

The dating of this phase is difficult to determine: it was presumably brought to an end by the first macadam road in the nineteenth century. The wear was perhaps mainly in the preceding two or three centuries, when wheeled traffic would have been regular on this stretch. It will be seen from the sections that while on the east side the stone dust layers lie directly on the agger, to the west they lie on the intermediate layers EE and RR. It is suggested that these, banked on the west side of the agger, and later than its construction, again reflect the lie of the land: cultivation and wind in Roman and post-Roman times would tend to move the soil from west to east, accumulating on the west, and leaving the east side bare of all save rainwashed stone dust. During this period probably of centuries, the west side of the agger must have been gradually buried until its surface was hardly higher than the ground. This accentuation of the eastern slope is a feature of the modern profile of this section of the road. In section B, the layer of stone dust FF was rather thicker on the west side, and was clearly contained by a roadside wall foundation, robbed out in section A, and absent in D. This wall still stands in a ruinous state farther to the north, and is likely to be of post-medieval date. It is therefore suggested that Phase II, the use of the agger without surfacing, may be placed mainly in the seventeenth and eighteenth centuries A.D.

Phase III. Earlier than the present road, probably nineteenth century A.D.

The first modern surfacing of the road is represented by layers U and T, the former apparently a base for the latter, and both containing quartzite pebbles. This metalling overlay the edges of the earlier east rut, but a new rut developed above the old one, though no west rut was seen.

This road was 12-16 ft. wide, and its hard surface brought the process of disintegration to an end. Layers K, X, and KK probably represent the wear of this surface, and are much more earthy than their predecessors.

Phase IV. Present trunk road

Presumably in the present century, the road was widened to 21 ft. by the insertion of new stone pitching of limestone and ironstone blocks in the full width of the old rut. On this were laid make-up layers HH and JJ (both of rammed stone, and possibly not contemporary), the cinder and slag layer S, and finally the tarmac.

The advent of rubber-tyred traffic on the tarmac road brought an end to road dust, which was so painful a feature of earlier travelling; humus and turf accumulated by the roadside for the first time for several hundred years; and apart from intrusions by service main trenches, the surviving part of the agger, and its accumulations of dust and dirt, remain to carry the heavy traffic of the A15 trunk road.

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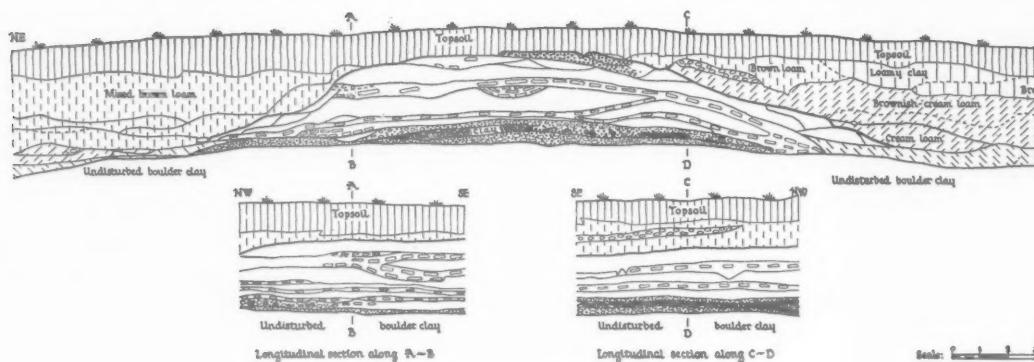
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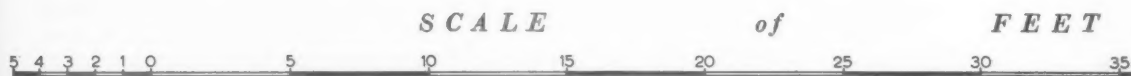
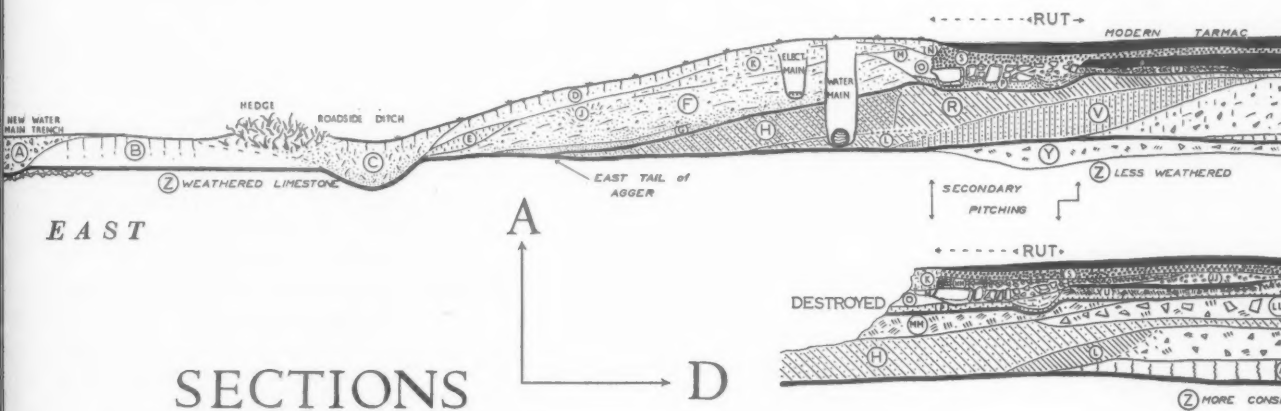
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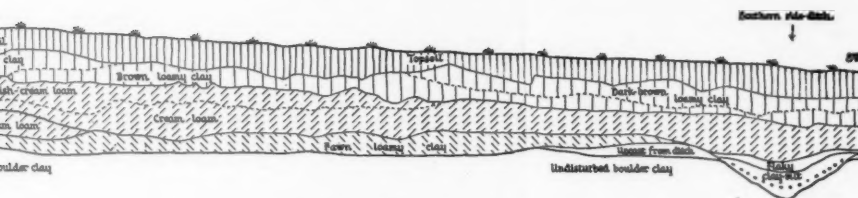
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ERMINE STREET

SCAMPTON





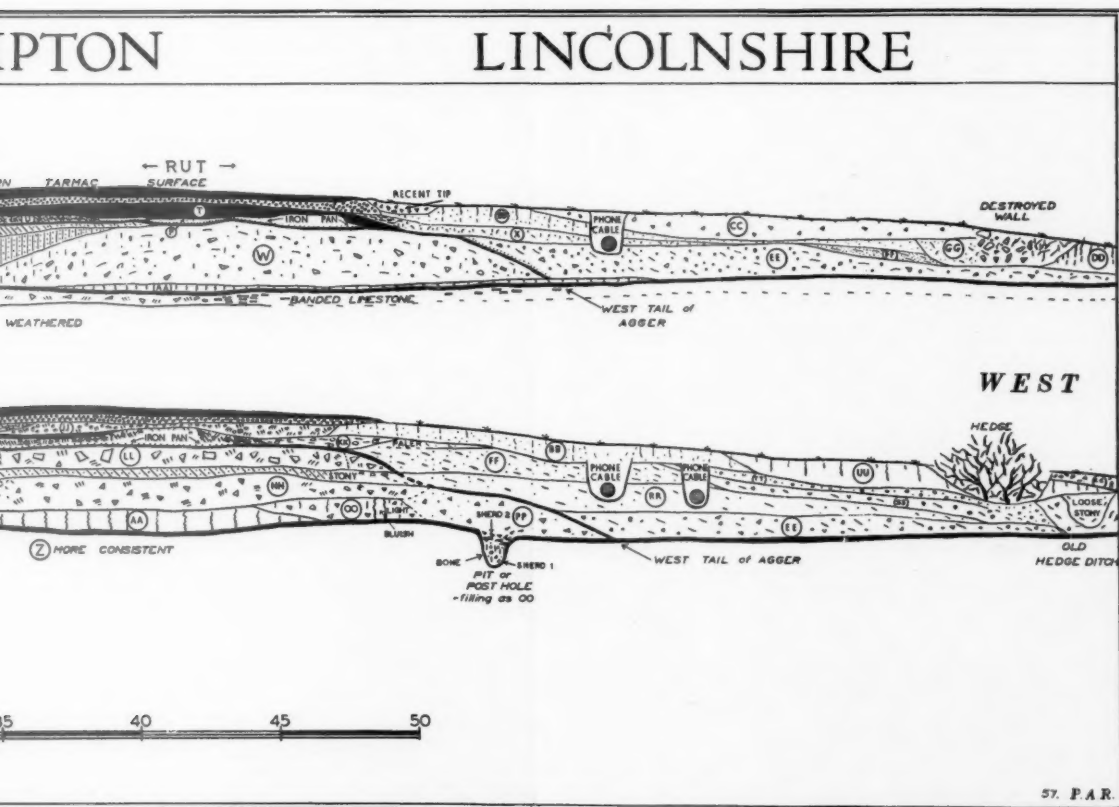
ERMINE STREET, STAMFORD, Lincs.

A section through the Roman road between the Emplingham Road (A606) and the Great North Road (A1), one mile west-north-west of Stamford bridge
National Grid Reference: 53/615075

Panned limestone rubble -

The same, with flagstones—

Scale: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Feet



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THE ROYAL BRONZE EFFIGIES IN WESTMINSTER ABBEY

By H. J. PLENDERLEITH, F.S.A., and H. MARYON, F.S.A.

At the outbreak of the Second World War the royal bronze effigies were removed from their positions in the chancel and stored in a place of safety. In 1945 they were assembled in the Norman Undercroft for cleaning. For this purpose a dilute solution of ammonia was employed, with striking results. The gilding became clear and bright and, where bronze appeared through it, the patina of the base metal was unaffected. Occasional small coppery areas indicated portions where there had been green corrosion before cleaning.

The series of figures, arranged in chronological order, is as follows:

	<i>Died</i>	<i>Material</i>
Henry III	1272	bronze
Eleanor of Castile	1290	bronze
William of Valence	1296	wood and enamelled copper plates
Edward III	1377	bronze
Anne of Bohemia	1394	bronze
Richard II	1399	bronze
Henry V	1422	wood
Elizabeth of York	1503	bronze
Lady Margaret Beaufort	1509	bronze
Henry VII	1509	bronze

The removal of the effigies from their normal resting-places provided an opportunity which might never occur again for a study of the methods employed in this country over a period extending from about A.D. 1272 to 1518 for the casting and gilding of bronze figures. The two wooden effigies were also examined.

It appeared, from a preliminary view, that the two earliest effigies, those of Henry III and his daughter-in-law, Queen Eleanor, should be examined together as being in a class by themselves. The figures are of unusual weight, for their thickness varies from 2 to 4 in. It is recorded¹ that they are the work of William Torel, a goldsmith of London. Torel first modelled the complete figure in clay or wax. Then in each case he made a separate mould for the right hand. This he cast in bronze and fitted into place later. The left hand was cast as part of the figure. A mould was formed over the whole of the remainder of the work. The clay model in its mould was then turned over and a recess, nearly 5 ft. long, 1 ft. wide, and some 4 in. deep, cut in the clay in order to lighten the weight (pl. xix*a*, *b*). Now Torel was a goldsmith, and he was evidently unfamiliar with the practice of casting large works in metal. It would seem that he called to his aid the bell-founders:

¹ *Royal Commission on Historical Monuments* *in London. Vol. I. Westminster Abbey* (1924) (England). *An Inventory of the Historical Monu-* pp. 7 and 29b.

craftsmen who were accustomed to dealing with larger work and greater masses of molten metal. The underside of the model was provided with suitable runners and vents, and a mould made over it. When completed, this part of the mould was lifted away, and all the clay or wax which formed the original model, together with the runners, was removed. The mould would be dried, and its inner surface suitably treated. It would then be buried in the floor of the foundry and the metal poured.

An examination of the bronze surface of both images, where exposed through the gilding, shows that, except where it had been burnished, very little work had been done on the casting prior to the gilding. The hair had been trued up with the tracer and chasing tools. The lion diaper pattern on the king's shoes was executed entirely with a single, pointed tool. The lions at the feet of the queen were cast in one with the figure, and her face and drapery had been generally worked over. Wooden plugs still remaining in holes in the metal provide evidence that jewels were set along the margins of the garments.

The cast metal showed a tendency to form isolated raised spots of cuprous oxide some $\frac{1}{8}$ in. in diameter resulting from underpoling or possibly overheating, or from some contamination from the mould. This was not serious, though it had entailed loss of gilding by rubbing, leaving the base metal exposed in spots.

In each of the two figures a thin film of reddish gold covered the front of the effigies. This is seen to run over the angles and to extend a small way behind the figures, leaving a wavy boundary which fades out in a thin wash—the characteristic margin left by mercury gilding. Unexpected confirmation was obtained in the following way. Silvery smears were discovered in the folds of the drapery, and also on the corresponding plinth in the Confessor's Chapel. These were at first taken to be soft solder, but on sampling and submitting to chemical analysis, tin and lead were absent, and mercury was found to be present (with gold). Three different methods of identification were applied, the results all indicating that mercury was present. As it would seem that the smears could only relate to the gilding process, the result is of considerable interest; firing is usually so complete as to leave no recognizable trace of mercury in the remaining gold. In the case of the Henry III effigy the difficulty of controlling the temperature of such a massive casting in order to eliminate the mercury may account for the survival of the evidence.

Another group of figures which can conveniently be studied together consists of Elizabeth of York, Lady Margaret Beaufort, and Henry VII, all by Pietro Torregiano of Florence. These were probably made in the following manner. The original model in wax (clay or plaster) was built on a framework of wood. The hands of the two ladies were moulded and cast separately. A plaster piece-mould was constructed to cover the whole of the remaining portions of the figure. And this in turn was covered with a plaster casing or 'mother-mould'. This outer mould was then removed and reversed. The sections of the piece-mould were detached, piece by piece, and replaced in the mother-mould. The original model could then be set aside, in reserve against possible accidents. After preparing the surface of the piece-mould (e.g. by varnish and grease) it would be lined with wax, the surface layer being painted into the mould to reproduce all fine detail and



a. Henry III. Underside of bronze effigy, showing recess cut in the model in order to reduce weight of the bronze cast



b. Queen Eleanor. Underside of bronze effigy, showing recess cut in the model to reduce weight of the bronze cast



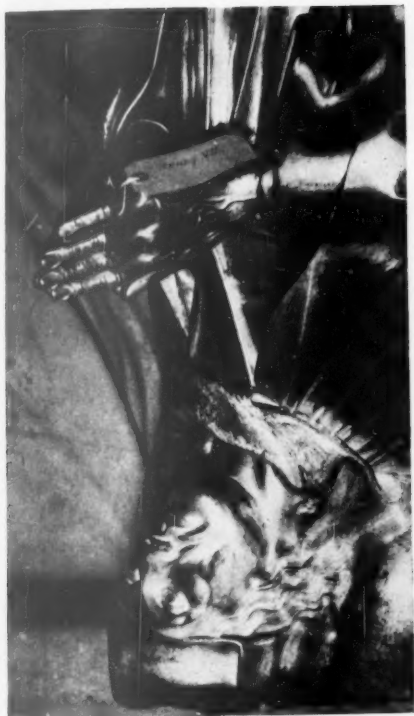
a. Elizabeth of York. Underside of bronze effigy, showing the form of the wax layer employed in making the mould for the bronze casting: the metal tenons which supported the hands are visible about a third from the top



b. Elizabeth of York. Upper part of gilt bronze effigy



c. Henry VII. Hand of gilt bronze effigy



a. Henry VII. Upper half of gilt bronze effigy



b. Edward III. Head of gilt bronze effigy



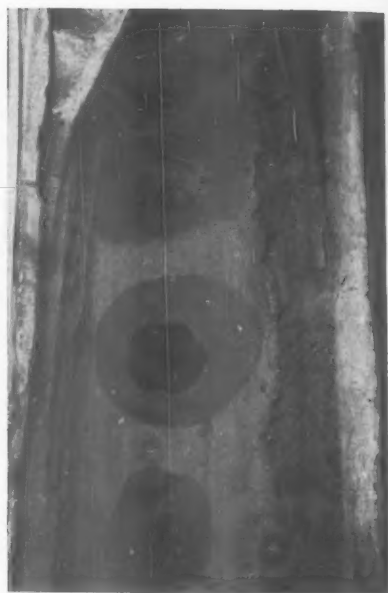
c. Lady Margaret Beaufort. Upper half of bronze effigy, showing remains of paint on wimple and cuffs



d. Edward III. Detail of gilt bronze effigy. Gold remains in eyebrow and hair



a. Anne of Bohemia. Upper half of gilt bronze effigy



b. Anne of Bohemia. Underside, showing large rectangular patch over the front of the costume. There is a round oil stain with a pentagonal patch in the middle of it



c. Richard II. Head of gilt bronze effigy



d. Anne of Bohemia. Underside, head end, showing plug patches in chest and various other repairs in wax for bronze

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additional sheets of wax pressed over all the forms in order to build up a sufficient thickness for reproduction in bronze. Additional lugs and strengthening pieces were fitted in wax (for metal) wherever required. Runners and vents were now affixed, and the under half of the mould, in some siliceous refractory material, constructed over them all.

The work was inverted, the mother-mould taken off, and all parts of the piece-mould removed. The surface of the wax cast was thus revealed. Upon this the sculptor worked, touching up the modelling, sharpening the drawing, and correcting the surfaces. When this was completed to his satisfaction, the front half of the siliceous mould was constructed over the wax model. The mould could then be opened, and it only remained to cut out or otherwise remove the wax, and to cast the effigy in bronze. The bronze castings in the three effigies in question are of the average thickness of $\frac{1}{2}$ in. or less.

The underside of the figure of Elizabeth of York (pl. xx*a*) shows the final form of the wax layer employed when making the mould into which the bronze was to be cast. The face and hands were carefully worked over before gilding (pl. xx*b*).

The modelling of the face of Lady Margaret Beaufort is excellent, and it was left practically untouched in the cast (pl. xx*i*). Her face, hands, cuffs, wimple, and the lining of the cloak were painted: not gilt.

Work on the wax model for Henry VII was carried far (pls. xx*i**a* and xx*c*), so very little more was needed on the bronze.

Edward III. The thickness of metal in this figure is $\frac{1}{2}$ to $\frac{3}{4}$ in., and for the head (pl. xx*i**b*) about $\frac{3}{8}$ in. The underside of the bronze conforms generally with the external form. It is probable that a casting technique similar to that described above for the figures by Torregiano was employed. The hands were cast separately. The face, hands, hair, and large areas of the drapery were carefully chased, filed, and scraped. On the eyebrows, where the gilding is partly worn off, vestiges of it may be seen, edge-on, in the chased lines, where it can be measured (pl. xx*i**d*). The thickness is from five to fifteen thousandths of an inch. The greenish colour of the gold indicates the presence of some copper in the gilding amalgam. The surface is free from raised blemishes arising from corroded base metal such as occur in the effigies of Henry III and Queen Eleanor.

Anne of Bohemia. The founder had great trouble with this effigy, and he found it necessary to recast a large portion of the front of the body by running fresh metal into the mould, where it fused on to the portion already cast (pl. xx*ii**a*). There are many blow-holes in different parts of the figure, and numerous patches and webs are present on the under-surface of the casting. Photographs of the underside of the cast show how the sculptor added little strengthening pieces of wax wherever he wished to build up the thickness of the bronze (pl. xx*ii* *b* and *d*). The base plate on which the figure rests is cracked in many places. Both arms are missing. The average thickness of the bronze is 1 in. The whole surface was worked over with chasing tools and scrapers. The belt and strapwork decorations are affixed by bifurcated rivets. The gilding is thin, greenish, and much worn. It was applied with the aid of mercury. There are no corrosion excrescences on the metal.

Richard II. This is an example of skilful casting, the bronze averaging $\frac{3}{8}$ in. in thickness. The head, with hood, was cast as a separate piece (pl. xxiii), and has strong lugs on its under-surface, which are employed in joining the head to the body. The inner surface follows the outer very closely. The hair and beard were chased, and the whole surface of the work was scraped and filed smooth. There are punched patterns, including the Plantagenet broom-pod, all over the drapery. The arms are missing. The gilding was by mercury. It is smooth and greenish, like that on Anne of Bohemia.

William de Valence. The figure is of gilded copper plates nailed to a carved wooden effigy. Most of one foot, the hilt and lower part of the sword are missing. The shield, belts, and pillow bear decoration in enamel, and the metal plates covering the figure are chased to represent chain mail. The enamelling on the shield and pillow is partly cloisonné, though the larger divisions may be champlevé. The colours are opaque red, blue, and white, with a thin red line painted on either side of each border or cloison. Twisted wire filigree with settings for jewels (now lost) form a brow-band and decorate the wrists, elbows, etc. Small enamelled shields once covered the cloak, but only three now remain.

Henry V. Wooden effigy, head and hands missing. The head was of silver, and the body is said to have been covered with silver gilt plates, but no nail holes are visible. The feet rested against two animals which are now missing. The absence of nail holes in the wood shows that the silver covering of the effigy was not affixed in separate pieces, but was an independent suit.

SUMMARY

1. An ideal opportunity for making a detailed comparative study of ten of the royal effigies from Westminster Abbey was presented by their temporary assembly for cleaning purposes in the Undercroft.

2. It was possible to make a special examination of the backs of the figures as well as the parts usually exposed, and in the course of study two distinct methods of metal-casting were recognized, (a) a bell-founding technique similar to that described by Theophilus, and (b) a wax-cast technique.

3. Mercury, or fire-gilding, had been applied in all cases. In one instance chemical analysis of a silvery smear in the folds of the drapery showed it to be due to gold amalgam. There was no corrosion of the surrounding metal.

4. The colour of the gold surface was occasionally greenish, indicating that a base gold had been employed in making the amalgam. In other cases an artificial richness had been imparted, doubtless with the lapse of time, by the red cuprous oxide of the underlying base metal shining through the thin surface film.

5. Of the two wooden effigies examined, that of William de Valence showed more points of interest. The question as to whether there was indeed champlevé work in the enamelled ornament had to be left open, as it was considered impossible to answer without in a measure undoing something of the recent work of the restorer.

NOTES

*A note on Romano-British pottery with painted figures.*¹—Mr. Graham Webster, F.S.A., contributes the following: One of the most important events in the history of Romano-British coarse pottery was the sudden introduction of new types of colour-coated wares towards the end of the second century, the generally accepted date being c. A.D. 180. The technique was not entirely new, as vessels of Claudian date with a bronze-green, metallic-like slip have been described as 'varnished' ware, while sand-faced or rough-cast beakers, common in this early period, survived to the end of the second century. When the new colour-coated wares were introduced they included, besides plain vessels and those with rough-cast and scale pattern, other forms of decoration. The most important of these was the technique of applying a slip forced through a nozzle on to the surface of the vessel, known as *en barbotine*. This technique had been used before, for example, by the Samian potters in forming their ivy leaves on Dr. forms 35 and 36. But during the second half of the second century some potters making Samian began to adopt cheaper methods on an extensive scale. One such method was to apply the decoration to the surface of the vessel, instead of making it in a mould. Of the various methods used, such as cut-glass technique, *appliqué*, and *en barbotine*, the last seemed to be the easiest and cheapest and to offer the most attractive results. Not only was the pattern in relief, but the potters contrived to fashion simple scrolls, animals, and figures, crude but recognizable, which although mass-produced, gave an effect of great verve. The recent discovery, however, of a mould at Stibbington, near Water Newton,² raises the question whether some of the figure types at least on the *en barbotine* vessels were not in fact applied casts from moulds. Haverfield detected here a 'revival of Celtic art'.³ While there is undoubtedly a superficial resemblance between the scrollwork *en barbotine* and the decoration on late-Celtic metalwork, the effect is more likely to have been the result of the technique itself, which demands rapid application of the thick slip and naturally tends to curvilinear patterns, rather than of any conscious or unconscious conformity with Celtic taste.

The production of wares decorated *en barbotine* in Britain appears to have been concentrated in the area of Castor (Durobrivae) and at Colchester, although there were possibly other centres. The sudden appearance of these wares may be the result of an immigration of potters from the Continent. If so, there are difficulties in recognizing the point of their departure, since no precise parallels either in shape or in decoration have yet been noted abroad. Chenet has recorded some fine examples from Lavoye⁴ in black and brown colour-coating. In shape, these vessels are closely modelled on Déchelette 72, as are also the East Gaulish types.⁵ The most noticeable difference between these continental types and their British counterparts is the absence in the latter of the globular form and of the carefully moulded foot-ring, which developed in some cases into a pedestal base.

Ever since the publication by Artis of *The Durobrivae of Antoninus* (1828), it has been known that Water Newton near Peterborough was a centre for the production of this type of pottery. The name of Castor⁶ has been used as synonymous with colour-coated ware generally, although

¹ The writer is grateful for helpful comments from Professor J. C. M. Toynbee and Mr. B. R. Hartley.

² *J.R.S.* xlviii (1958), pl. xx and p. 139.

³ *The Romanization of Roman Britain* (1923), pp. 50 ff.

⁴ *La Céramique sigillée d'Argonne des II et III*

siècles (1955), figs. 16 and 29–31.

⁵ Ludowici, *Stempelbilder, Rheinzaubern* (1901–5), pp. 246–7; Oswald and Pryce, *An Introduction to the Study of Terra Sigillata* (1920), pl. lxxix.

⁶ The modern village on the north bank of the river Nene.

this ware must have been produced at many other places, especially in the third and fourth centuries.¹ Decoration *en barbotine* may have been confined to this area, with the notable exception of its use on the remarkable vessels at Colchester.² The scenes with human figures on pots from both districts tend to be rather stereotyped and poor in execution. The commonest motives are chariot races, gladiatorial fights, and the Labours of Hercules.³ Poor though they may be, a comprehensive study of these figure-scenes is long overdue.

It is not the purpose of this note to consider the problems of these wares in general, but to draw attention to the use of a technique alternative to *en barbotine*—that of painting figure-scenes on the body of the vessel. There may be difficulty at times in deciding whether decoration of a colour different from that of the body has been applied by nozzle or brush. The latter produced a much thinner band, without the high relief given by the *en barbotine* method; but the brush is also much more controllable and allows the craftsman unlimited scope in working on a decorative scheme. It therefore seems strange that at first brushwork was confined, in Britain, to the simple bands and scrolls common on vessels of the fourth century. The Rhenish potters were certainly more ambitious in the exercise of this technique, which they applied, not only to carefully executed letters on beakers with drinking mottoes, but also to depicting faces and busts.⁴

It is now realized that in the Castor area there also existed skilled craftsmen who used this painting technique both by itself and to add detail to scenes *en barbotine*. One of the most interesting vessels of the latter class, now in the Peterborough Museum, shows a lively circus scene with wild beasts, a female acrobat, and men with whips.⁵ (pl. xxiii). This vessel, in cream ware, has a colour-coating of light brown on the figures, which appear to be executed *en barbotine*, with details added in the same manner but in a different colour and further decoration of scrolls, etc., painted in dark brown. Another recent discovery, from an excavation south of the Roman town,⁶ consists of five fragments of a vessel in cream ware having incised letters carefully filled with red-brown paint, a goat and a cock, *en barbotine*, on which again details had been painted, and a tree had been wholly executed in brushwork (pl. xxiv f).

Apart from these pots (and it is probable that many other examples with the combined techniques are in existence),⁷ there are also vessels, as yet unpublished, which are decorated with figures and other subjects carried out in paint only, some of them being very skilfully executed. It is the purpose of this note to draw attention to these interesting vessels, which appear to have originated in the Castor area.

1. Five sherds (pl. xxiv) in Peterborough Museum from the Walker collection appear to have been found in 1893 in Castle Field, Chesterton (the name then given to the fortified town of Durobrivae).⁸ It is probable that some of these fragments belong to the same vessel. The

¹ As for example at Swanpool, near Lincoln: *Antiq. Journ.* xxvii (1947), p. 61.

² Now in the Colchester Museum; the kilns that produced them have been found and are in process of publication by Mr. M. R. Hull, to whom the writer is indebted for help and information in preparing this note. An illustration of a very strange circus scene on one of these vessels has recently been published: J. M. C. Toynbee, *Latomus*, xxviii (1957), pl. lxii, fig. 4.

³ e.g. Hercules and Hesione: Haverfield, *op. cit.*, p. 51, pl. 20.

⁴ e.g. the beaker at Trier with four busts of deities and motto painted in polychrome: *Trierer Zeitschrift* (1926), pp. 1-17.

⁵ *V.C.H. Hunts.* i, pl. v. I am greatly indebted

to Mr. Sheppard Frere for allowing me to publish these photographs taken for him by Mr. M. B. Cookson.

⁶ Carried out by the Ministry of Works in 1957 on Site 3: details kindly supplied by Mr. E. Greenfield. The fragments of lettering may be parts of the name of Mercury with whom the goat and cock can be associated.

⁷ Like the remarkable indented beaker from Richborough in grey ware with figures in relief, which appear to have been mould-made, and decoration in white paint: *Richborough III*, pl. xliii.

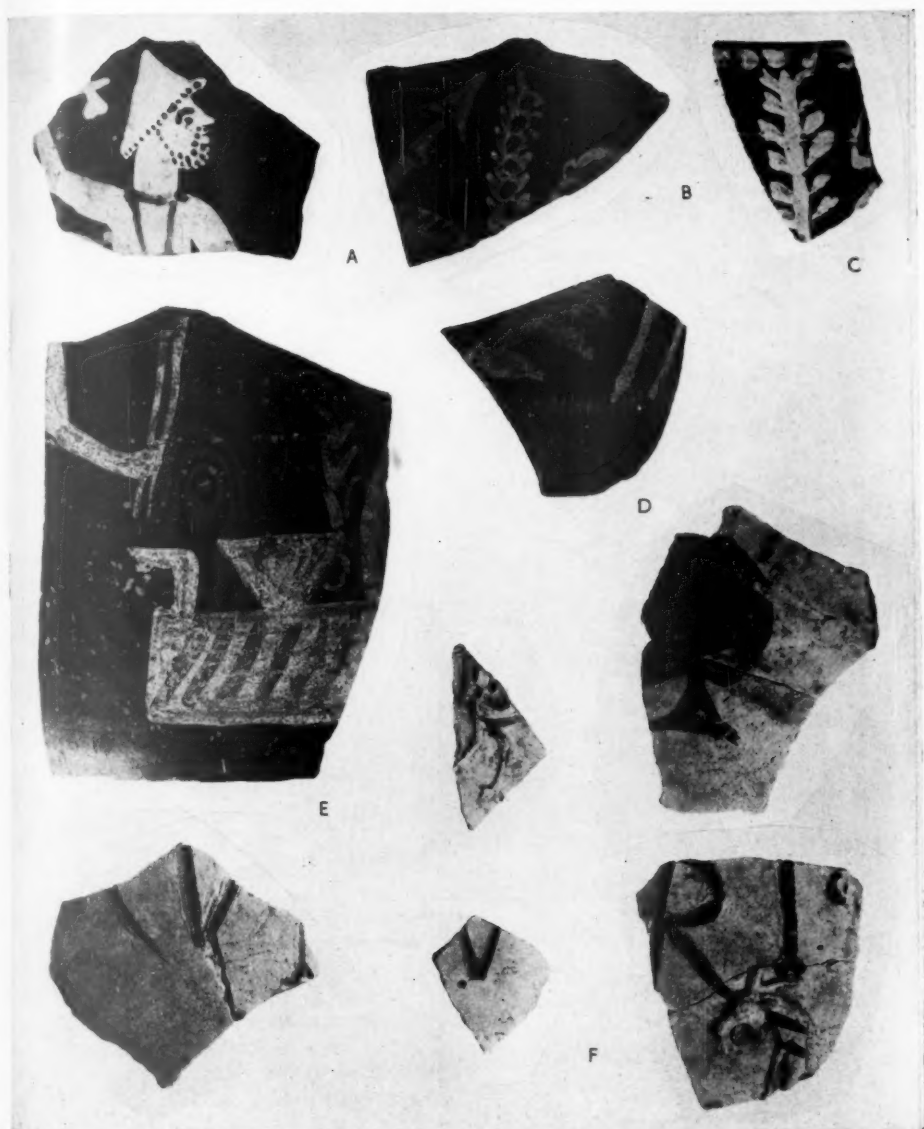
⁸ See 'A History of Roman Chesterton' by Mr. G. Wyman Abbott, in the *Annual Report for 1914* of the Peterborough Natural History, Scientific, and Archaeological Society.



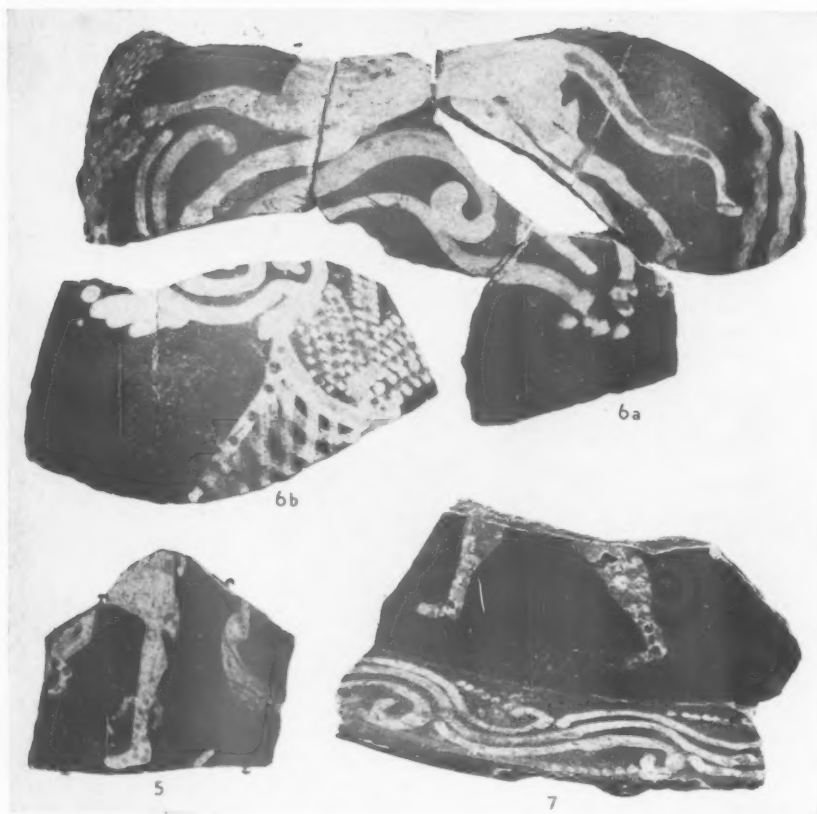
Photograph: M. B. Cookson



A circus scene (?) on a vessel in Peterborough Museum. (1)



Painted wares from Water Newton. (1)



Painted wares from Water Newton. (3)

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colour-coat is a black metallic-like sheen on A, B, and E, and dark umber on C and D, the paint is white, but details are added in a yellow-brown.

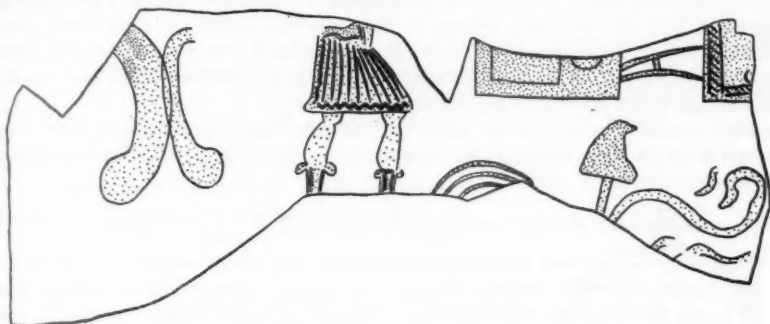


FIG. 1. Fragments of a painted vessel in Peterborough Museum. (1)

2. In the collection of Mr. G. Wyman Abbott, now also in Peterborough Museum, are two more remarkable fragments which can be joined¹ (fig. 1). This vessel is a large one with a whitish body and pinkish, light-brown surface. The paint is in shades of light and dark umber, but, unlike any other similar examples, the details are outlined with a fine, pointed tool which has left a series of thin incisions and small dots.

3. A far cruder example (fig. 2), is in Wisbech Museum.

4. From Kettering comes a painted sherd of Hercules and the Nemean lion or possibly of a *venatio*.²

5. A sherd (pl. xxv) found in 1956 in a section through the defences of the Roman town³ has a black colour-coating and the painting is done in cream, with details added in red-brown. There are two figures, one apparently following the other, since the position of the smaller foot on the left edge suggests that it could hardly belong to the figure occupying the central part of the sherd. The painting has been carried out very deftly, especially in the swirl of drapery on the right, and clearly indicates a proficiency gained from long practice.

6. Two fragments of a large vessel, said to have been found near Alwalton, a village to the south of Water Newton, in creamy-brown ware with a smooth red-brown colour-coat and decoration in white and red-brown paint⁴ (pl. xxv).

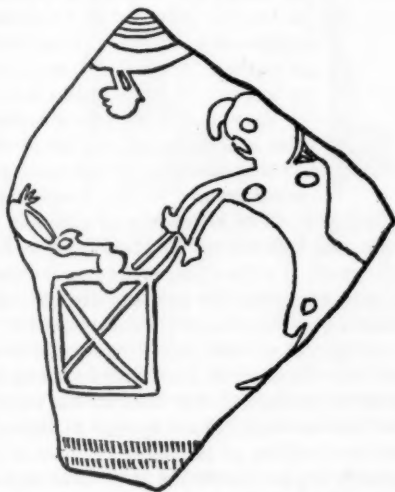


FIG. 2. A painted sherd in Wisbech Museum. (1)

¹ The writer is greatly indebted to the owner for allowing him to inspect and draw these pieces.

² *P.S.A.* 2nd ser. xxiii (1911), p. 498 and figs. 3 and 4.

³ Carried out by the Ministry of Works: information kindly supplied by the excavator, Mr. E.

Greenfield.

⁴ I am grateful to Mr. B. R. Hartley for drawing my attention to these fragments from the collection of B. J. W. Kent, F.S.A., and for allowing me to have them photographed.

7. Part of a lid found in a pit, or possibly a hole for puddling clay, in the excavations of 1958 due to road widening and carried out by the writer. This sherd is in cream ware with a dark-brown colour-coat and paint in white with details picked out in red-brown. This remarkable lid has a flange and bead and the latter appears to have been deliberately broken away, presumably to fit a different bowl. It is difficult to parallel in pottery but it would seem that it is probably an imitation of a silver vessel, an example of which appears in the Mildenhall Treasure,¹ but here the flange belongs to the bowl and not to the lid. (pl. xxv).

Many other vessels decorated in the same manner must have been made, and it is hoped that this note will help museum curators and excavators to recognize yet further examples of this extremely interesting class of ceramic art.

Notes on the subject-matter of the fragments by PROFESSOR J. M. C. TOYNBEE, F.S.A.

- 1 (a) (pl. xxiva). The head and bust of a bearded male figure, wearing a conical cap with face turned in profile towards the right and body frontal. The dark stripe round the neck and the two dark stripes that pass vertically across the chest may represent respectively the upper edge of, and metal strips on, a cuirass. In his raised right hand the figure brandishes a double axe. The personage is probably Jupiter Dolichenus. Cf. the pottery fragment at Corbridge with moulded (?) decoration in the form Jupiter Dolichenus standing and facing to the front, bearded, wearing a conical cap, cuirass, and cloak, and flourishing a double axe in his right hand.²
- (b) (pl. xxivb). The end of a thyrsus (?) or wand of some kind, with conical terminal; portions of a wreath, of a tambourine (?), and of a metal (?) object.
- (c) (pl. xxivc). A spray of leaves.
- (d) (pl. xxivd). A spray of leaves and part of two wands.
- (e) (pl. xxive). On the left, a human hand holding a pair of wands (?). On the right, what appears to be an altar or ritual table, on the upper surface of which are placed a 7-shaped object of unknown purpose, a large vase, a vertical spray of leaves, and a curved feature, of which only a small portion survives.

2 (fig. 1). The lower part of a human figure standing to the right, wearing a short, pleated tunic and high boots. To the left are two rope-like, slightly intersecting features, possibly parts of a scroll. To the right, below, are portions of a floral scroll; above are parts of two rectangular objects connected by two slightly curved bars joined together by a vertical cross-bar. The meaning of these last objects is uncertain.

3 (fig. 2). A very crude representation of a man, the crown of whose head and whose legs are lost. He faces to the left and extends both arms before him, holding with both hands a two-pronged implement that rests on the top of a rectangular object, with crossed diagonal bars on its front surface. There appears to have been a second figure on the left, facing to the right, and also holding an implement that rests on the top of the rectangular object. The scene may possibly depict two smiths at work at an anvil.

4 A man fighting a lion. Since there are traces of other figures belonging to the scene, this is more likely to be a *venatio* group than Hercules and the Nemean lion.

5 (pl. xxv). The left leg of a human figure advancing towards the left, wearing a short tunic and boots made of dappled beast-skin and equipped with lappets at the top. A twist of drapery, part of the figure's cloak, appears on the right. On the left is the foot of a much smaller figure, wearing boots similar to those of the larger figure. This foot would seem to belong either to a child or to a background figure drawn in 'perspectival diminution'.

¹ *The Mildenhall Treasure*, British Museum Handbook, 1947, pl. 26.

² *A.A. ser. 4*, xxi (1943), p. 193, and pl. xc, i.

6 (pl. xxv). The galloping animal (A) with hooves and long tail has the appearance of a bull rather than a horse. There is on another fragment (B) what appears to be an overturned wicker basket with feathery sprays of flowers emerging therefrom, and similar sprays are seen on the left edge of the first fragment. There is a possibility that the complete vessel may have illustrated the story of Jupiter in the guise of a bull coming to carry off Europa, who was surprised while picking flowers with her companions, a theme used on mosaics¹ and paintings.

7 (pl. xxv). The scrollwork on the flange is crude but vigorous and the remains of the striding figure with very well-developed calves and dappled-skin boots (?) impressive.

A bronze spur from the Thames at Kingston.—Mr. George C. Boon, F.S.A., sends the following note: fig. 1 represents a bronze spur dredged from the Thames by the Thames Conservancy Board in April 1932. The find-spot was at Raven's Ait above Kingston road-bridge. The spur now forms part of the Thames Conservancy Board's collection of antiquities deposited at Reading Museum (*Acc. no. 104:52*).

The spur is 5.4 in. long overall and 2.9 in. wide. It is in very good condition, lightly patinated. There are signs of considerable wear on both buckle-spindles. As a prick-spur with zoomorphic terminals, it is of considerable interest, and may probably be assigned to the Carolingian period. Spurs of somewhat similar type, but none very close to the Kingston specimen, are shown in Zschille-Forer, *Der Sporn in s. Formenentwicklung*, Taff. III, xxii, xxiii, and xxx, dated eighth–ninth century.

I am indebted to the Thames Conservancy Board and to Reading Museum for permission to publish this item, and to H. de S. Shortt, F.S.A., for an opinion on its date. For the drawing I have to thank Mr. T. L. Gwatkin, Director of Reading Museum.

Romano-British rustic ware: a postscript.—Mr. F. H. Thompson, F.S.A., contributes the following: in my recent study of Romano-British rustic ware,² I based my views about the probable origin of this style of decoration on evidence primarily gathered from published reports. The tentative conclusion reached³ was that the Rhineland was possibly the source but that no one pottery type offered itself as the indisputable link between that area and Britain. I have now been able to supplement this superficial analysis of the continental material by examining the contents of a number of Rhineland museums in the course of a visit to legionary fortress sites along the Rhine.

At two widely separated sites, Nijmegen (Noviomagus) in Lower Germany and Strasbourg (Argentorate) in Upper Germany, examples were noted of vessels with rustication closely akin to the linear style so common in Britain. The Rijksmuseum G. M. Kam at Nijmegen contains several squat jars in light grey ware with zones of vertical linear rustication, and one example of the haphazard and overall linear decoration with which we are more familiar.⁴ All these vessels are assigned to the first period of Roman occupation and antedate the establishment of the legionary fortress in A.D. 70 after the crushing of the Batavian revolt under Civilis; this

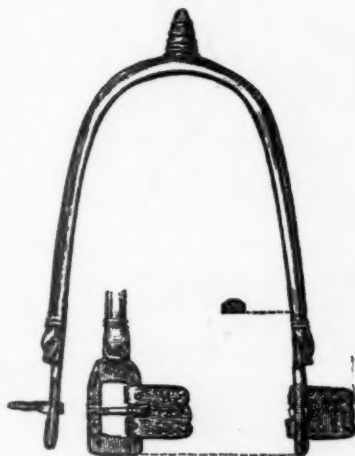


FIG. 1. Carolingian bronze spur from the Thames at Kingston. (1)

¹ As in *Lullingstone Roman Villa* (1955), pl. 5.

² *Antiq. Journ.* xxxviii, 24–51.

³ *Ibid.*, p. 32.

⁴ Cf. J. H. Holwerda, *De Belgische waar in Nijmegen*, pl. XIII, no. 671.

primary occupation was no doubt of a military nature but too little is known about it to establish any direct link with Britain.

At Strasbourg, the Musée Archéologique contains two jars with overall linear rustication: the first (fig. 1, 1) was presented to the Museum in 1932¹ and is a cinerary urn in hard grey ware, still containing a cremation, from the Gallo-Roman cemetery at Schaffhardt in the commune of Ulkirchgraffenstaden, about 7 kilometres from Strasbourg. The second (fig. 1, 2) in hard dark



FIG. 1. Rustic ware in the Musée Archéologique, Strasbourg. (2)

grey ware, was found in 1903 in the Vieux Marché aux Vins,² which falls within the area of the *canabae* attached to the pre-Flavian legionary fortress. It is undated, but a sherd with similar rustication was found in a Tiberius–Claudius level in excavations in 1956 near the Église St. Étienne, also in the *canabae* area. In form, the first is a type frequently encountered in the Rhineland, whereas the second would not look out of place in a Romano-British context. Moreover, the presence at Strasbourg of *Legio II Augusta* until A.D. 43, when it took part in the invasion of Britain, provides a close link between the two areas.

At all events, it is clear that overall linear rustication was already being applied to jars, and not merely to small hemispherical bowls (*Hofheim* 22), in the Rhineland before its appearance in Britain. The incidence is slight (none was observed in museums between Nijmegen and Strasbourg) but sufficient to strengthen the case for regarding the Rhineland as the source of this style of decoration.

¹ Accession no. 39280.

² Accession no. 4857.

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REVIEWS

Le Palais royal d'Ugarit. Ed. by C. F.-A. SCHAEFFER. II: Textes en cunéiformes alphabétiques des archives est, ouest et centrales, by C. VIROLLEAUD. III: Textes accadiens et hourrites des archives est, ouest et centrales, by J. NOUGAYROL. IV: Textes accadiens des archives sud, by J. NOUGAYROL. (Mission de Ras Shamra, Tomes VII, VI, and IX.) 11 × 8½. Paris: Imprimerie Nationale, 1955-7. 3800 fr., 6400 fr., 4800 fr., respectively.

The Royal Palace at Ras Shamra, first located by Dr. Schaeffer during the season of 1938-9, was found to contain at least four distinct archives, and in these, unlike other parts of the site, Akkadian texts considerably outnumbered those in the alphabetic Ugaritic. M. J. Nougayrol was invited to undertake the publication of the Akkadian texts, while M. C. Virolleaud concentrated on those in Ugaritic, and M. E. Laroche was allotted the comparatively small amount of Hittite and Hurrian material. The publication of the texts, under the title *Le Palais royal d'Ugarit*, was planned on an ample scale, and the three volumes under review are the first of the series to appear.

Volume III, which is dated 1955, contains the majority of the Akkadian texts from the western, eastern, and central archives. These texts fall into the categories of letters, juridical documents, economic texts, and a few miscellaneous pieces; the unique tablet inscribed with the trousseau of Queen Ahatmilku, and the list of objects forming the tribute due to the Hittite king, are included among the economic texts. Among the 23 letters are one from the Hittite king and at least two copies of outgoing letters addressed to him. By far the largest category is that of the juridical texts, of which there are 176, and the volume contains a penetrating discussion of these from the pen of M. G. Boyer. There are 40 economic documents and 6 fragments of 'scholastic' texts (vocabularies). The volume concludes with an edition (by M. Laroche) of the seven Hurrian texts, one of which is a tablet of moral precepts with an Akkadian version.

Volume IV, dated 1956, is devoted to the diplomatic archives of the southern wing of the palace. These well-preserved Akkadian documents all emanate either from the Hittite chancery at Hattusas or from Hittite vassal states, such as Carchemish; they may thus be regarded almost as a detached section of the Boghazköy archives. M. Nougayrol has grouped them by reigns and within each reign by 'dossiers' consisting of documents referring to the same events, an arrangement which shows how much of the history of Ugarit is re-created by these texts. Many of the tablets bear seal impressions which have been studied in *Ugaritica III* by Laroche.

Volume II, which was the last to appear (1957), contains the texts in the Ugaritic language recovered from the palace. There are three mythological fragments, all belonging to the Baal-Anat cycle; several royal deeds and private letters; lists of craftsmen and other persons; numerous economic texts of various types; thirteen inscribed bullae which served as labels for bundles of tablets; and finally five alphabets, including one from the pre-war excavations published previously but then not recognized for what it was. The labels include six from the southern archives which show that the scribes had their own word *spr* for a group of documents on a single subject such as M. Nougayrol calls a 'dossier'. M. Virolleaud did not find it possible to offer a translation of all the pieces, but each has been copied and transliterated.

All three volumes are well printed and handsomely bound and give promise of a fine series of publications, worthy of a great discovery.

O. R. GURNEY

Hazor I. An account of the first season of excavations, 1955. By Y. YADIN, Y. AHARONI, R. AMIRAN, T. DOTHAN, I. DUNAYEVSKY, and J. PERROT. (The James A. de Rothschild Expedition at Hazor.) 13½ × 9½. Pp. xxiv + 160 + 184 pls. Jerusalem: at the Magnus Press, the Hebrew University, 1958. £8. 8s.

This volume, the first instalment of the publication of the excavation of Hazor in Galilee, is

the first-fruits of the plan of campaign of four seasons conceived by the excavator, General Yadin. The dig was planned to last for four seasons, all of which have now been carried out with outstanding efficiency and success. Visitors to the excellent exhibition organized by General Yadin's supporters, the Anglo-Israel Exploration Society, at the British Museum last spring could already judge for themselves the remarkable progress of discovery after the first three campaigns. The work on the site itself was very highly organized and planned so as to be channelled straight into a book—much as used to be done by Petrie—and the present work is the first result. The only disadvantage that this method may bring is that if the remaining volumes are on an equally detailed scale, it will make a very massive work, unless all subsequent repetition is sternly eliminated.

In spite of the absence of final epigraphic evidence, there can be now almost no doubt of Garstang's correct identification of the site; incidentally General Yadin has discovered that Garstang himself was anticipated in the suggestion by J. L. Porter, writing in Murray's Guide in 1875. The task of Yadin has been to take up the thread where Garstang left off with a trial trench. With munificent support from the late James de Rothschild and the Anglo-Israel Exploration Society, and generous collaboration from the Hebrew University, Yadin and his colleagues have completed their plan and laid bare, at least in outline, the history of Hazor, though of course on a site of the immensity of Hazor, four seasons, however fruitful, can hardly be regarded as a finished task, but only as a beginning of ascertainable knowledge. For one thing, the cuneiform archives of the Canaanite city of the period of the Tell-el-Amarna letters (which include correspondence about Hazor) have not yet been found, though they must surely be there. But we are here concerned only with the results of the first season, as depicted in the present volume. Of this we may say that the information it contains is all that could be desired. We are already offered in fullest detail a very rich series of North Palestinian pottery in the Bronze and Iron Ages, previously unavailable, while for the study of religion we have the very important find of the Sun God's shrine with its statuary and ritual appurtenances. The architectural drawings, sections, and plans are excellent. In this volume it is established that Garstang's lower 'chariot enclosure' or 'camp' was in fact part of the thickly populated Bronze Age City; while on the citadel mound itself seven Israelite strata have been identified, from the time of Solomon to that immediately following the destruction by Tiglathpileser. The wider implications connecting the destruction level of the Canaanite Late Bronze Age city with the Biblical record of the sack of Hazor by Joshua are left for a future volume.

R. D. BARNETT

Lachish IV: the Bronze Age. By OLGA TUFNELL and others. Wellcome-Marston Archaeological Research Expedition to the Near East. 12 x 9 $\frac{1}{2}$. Vol. I, text, pp. 351. Vol. II, pls. 96. Published for the Trustees of the late Sir Henry Wellcome by the Oxford University Press, 1958. £8. 8s.

This volume is the fourth and last of the series dealing with the excavations at Tell Duweir in Palestine, and completes the record of the work directed by the late J. L. Starkey until his untimely death.

The exploration of the Bronze Age levels on the tell had not been begun and only one or two trenches touched on this period. The Fosse Temple published in Volume II was the only complete building belonging exclusively to the Late Bronze Age which was uncovered.

In this volume Miss Tufnell has pieced together what is known of the earlier periods from a number of tomb groups and caves in outlying areas and such small sections of stratified material as were available.

The earliest occupation of the area was in the north-west settlement on a rocky ridge away from the main tell. Here a number of cave dwellings were occupied during the Chalcolithic—Early Bronze

Age though some were used for mass burials. Sporadic finds bear witness to some Mesolithic and Neolithic occupation. This phase was succeeded by a fresh influx of people to whom the name 'Caliciform' culture has been applied. They represent the transition to the Bronze Age and occupied some of the caves and made their burials in small chamber tombs. Except for a few late burials, the area then ceased to be occupied and the main tell began to be formed.

The north-east section yielded evidence for third-millennium occupation on the tell, but there was no trace of Early Bronze Age defences. Above a Middle Bronze plastered glacis stood within the Fosse, previously revealed below the temple. On top of these, indications of three main Late Bronze Age levels were uncovered.

In addition to the details of the cemeteries, there are chapters on pottery, metals, seals, and scarabs and some early Canaanite inscriptions on sherds, together with some useful charts. Appendices on Plant Economy by Helbaeck, Flint implements by Waechter, Human and Animal remains by Giles and Bate, and Metal analyses by Thompson conclude the volume.

The conclusion of these reports is a fitting record of the work of the Wellcome-Marston Expedition and a tribute to Miss Tufnell's industry in bringing it, almost single-handedly to a successful termination.

JOAN DU PLAT TAYLOR

Digging up Jericho. By KATHLEEN M. KENYON. 8½ × 5½. Pp. 267 + pls. 64 + figs. 4. London: Ernest Benn Ltd., 1957. 30s.

When Miss Kenyon decided in 1952 to renew the excavation of Jericho, it was evidently an inspired decision. For no one then could quite have foreseen how radically five more seasons of excavation (seven including two that have followed the writing of the book), on a site already heavily worked, would expand our knowledge and upset the conclusions of earlier excavators. This unforeseeable result, achieved by what must have seemed to most sympathetic observers at that time an unpromising gamble, has been due partly to inspired good fortune, but much more to consummate technical skill and perseverance, as a glance at the frontispiece, or at the portentous final fig. 4, will convince any reader.

The great Trench I, which was to reveal the full antiquity of Neolithic Jericho, was the most spectacular, laborious, and successful piece of stratified digging ever attempted in the Near East. The brilliant salvaging of the later Middle Bronze Age tombs (chapter 10 and pls. 50-61) was equally an object lesson in resourcefulness and a variety of other archaeological virtues.

The extraordinary historical interest of Jericho has arisen from two sets of factors—its tropical climate and abundant water, and its position at the natural crossing of the Jordan Valley which gives the first access north of the Dead Sea to fertile lands on the west. To its climate and water Jericho owed an agricultural civilization reaching far back into the seventh, even into the eighth millennium, of which it is so far the only example; to its strategic position it owed the doubtful privilege of witnessing time and again the perennial migration of nomadic peoples from the Arabian wastes into the lands west of the valley. Thus the excavations have revealed the longest perspective of settled life known to man, punctuated by relapses into barbarism as nomadic intruders sought the comforts and acquired the arts of civilization.

Miss Kenyon divides the account of Neolithic Jericho into two chapters, reflecting the most startling of her discoveries—that a vastly more ancient, and totally unsuspected, urbanized agricultural society at Jericho had preceded by a millennium or more the Neolithic village cultures previously known from widely distributed Near Eastern sites such as Sha'ar ha Golan, Byblos, Mersin, and Jebel Jarmo. Carbon-dating tests, and huge stratified deposits, place this conclusion beyond doubt. The 'First Jericho', comprising two distinct phases, itself spanned a vast duration of time; exhibited an architecture of almost incredible competence; and developed, two thousand

years before the Neolithic village cultures, a society having 'all the attributes of civilisation, except that of a written language'. This happened before the invention of pottery.

The discoveries described in subsequent chapters, extending in chronological sequence from what Miss Kenyon calls the 'Proto-urban Age' (corresponding to the terms 'Proto-dynastic' and 'Proto-literate') to the coming of the Israelites, are somewhat less spectacular, but still throw interesting light both on the life and material culture of townsmen during the Bronze Age, and also on the complexity of those tribal movements which periodically brought new blood into the populations of the settled lands. Joshua and the Canaanite walls, as expected, have vanished from the scene.

The book is written in an easy style, conveying much of the interest and excitement of a 'dig' with enough archaeological facts to make the historical deductions intelligible and convincing. In short, it will be read with interest and amusement by non-archaeological readers, and without a painful sense of duty by archaeologists. Nevertheless, these will also find it a valuable source, pending a fuller publication, both of facts and of illustrations. The plates are of excellent quality, and made from first-class photographs, some of them most dramatic in character. The selection illustrates effectively both the life and problems of a 'dig' and also the historical matters discussed. Lastly, showing more human sympathy with the ordinary reader than most archaeologists permit themselves, Miss Kenyon lets him off with not much more than two pages of pot-drawings.

R. W. HAMILTON

The Decipherment of Linear B. By JOHN CHADWICK. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. x + 148. Cambridge: at the University Press, 1958. 18s. 6d.

It is now more than six years since Michael Ventris, himself hardly yet convinced that he had succeeded, penned his Work Note 20 and thereby solved the cryptographic problem of deciphering an unknown language written in an unknown script. But his own first paper on the discovery in the *Journal of Hellenic Studies* 1953 gave only slight clues about the method he used, and kept silence about its historical progress. *Documents in Mycenaean Greek* maintained this silence. It is as right as it is fitting that Dr. Chadwick, who became Ventris's partner, should break it. To reconstruct the chain of reasoning of the pioneer is for us moderns an essential element in comprehension. Moreover, Dr. Chadwick's straightforward and sober account is now available for comparison with the extraordinary statements which Professor Beattie makes in his latest article ('A Plain Guide to the Ventris Decipherment of the Mycenaean Linear B Script', *Mitteilungen des Instituts für Orientforschung* vi, 1 (1958)).

Dr. Chadwick stresses the amount of sheer hard work on which genius built. First came the scrutiny and classification of the signs, and the conclusion that the script was syllabic, interspersed with picture signs or ideograms, used for totalling. The second step was to study the patterns formed by the signs, and the linguistic phenomena these represent (numbers, conjunctions, adjectives and nouns, inflections, prepositional structures). The analysis aimed at determining the relation of the groups to each other on the suggestion that particular linguistic relations were involved, and proceeded by search for hypotheses free of contradictions. The thoroughness of this analysis was the 'magic' which brought the answer tumbling out when at length Ventris experimented with the Greek forms of Cretan place-names as phonetic equivalents. Such is Dr. Chadwick's story, successfully told in terms that the intelligent non-specialist can understand and yet without falsification. It is put into perspective by a discussion of earlier attempts, and supplemented by a brief and cautious appreciation of the gain to scholarship resulting from this capital discovery.

E. G. TURNER

Céramiques de Bactres. Par J.-C. GARDIN. 11 × 8½. Pp. 130 + pls. 24. (Mémoires de la Délégation Archéologique Française en Afghanistan, tome 15.) Paris: Librairie C. Klincksieck, 1957. Frs. 3,600

This is a systematic analysis of material extracted from the vast ruin field of Balkh in the years 1946-7. The somewhat unorthodox method adopted to obtain the specimens consisted in digging 71 square probe-shafts (1.5 by 1.5 m.) and marking the finds as they occurred in arbitrarily sliced layers varying in depth from 25 to 75 cm. Thirty-seven of these unstratified shafts were concentrated on the high ground of Bala Hisar. In addition, two stratified soundings were carried out farther east at Tepe Zargaran. One of these reached down to virgin soil and provided the 'contrôles' for classifying the finds from the probing shafts which the leader of the French Delegation, M. Daniel Schlumberger, describes as so many *coups d'épingle*. The work of analysis and classification was undertaken by M. Gardin (who had not participated in the excavation) from 1952 onwards. The end-product is an impressive achievement and, within the limits imposed by the nature of its raw material—which the author is the first to recognize—a notable contribution.

It appears that in the second half of the first millennium B.C. the settlement at Balkh was confined roughly to the walled-in area known today as Bala Hisar. Pre-Kushan wares found here are red smoothed and white. Rough grey ware is totally absent but appears in the stratified sounding at Tepe Zargaran. It includes large jars and spherical bowls with arched, horizontal handles, types of characteristic grey wares loosely labelled Scythian which enjoyed a vast distribution from Tadzhikistan to the northern shore of the Black Sea. Too crude to have constituted a merchandise which would have travelled long distances from a single centre of production, these rough, grey wares appear in each instance due to local workshops, and to owe their similarities to affinities in ethnic or geographic origins of their makers. (Sarmatian migrations in the west and Scythian pressures on the northern frontier of Bactriana in the first two centuries B.C.—both probably due to the pressure exerted by expanding Turco-Mongol tribes farther east.) The grey wares at Balkh disappear with the last Kushans.

The Bala Hisar area seems to have been abandoned from the Kushan invasion until its rebuilding by order of Timur in A.D. 1400. Very striking indeed is the absence at Balkh of finds attributable to the Mongol Period, which seems to have been one of utter desolation and decay. The large quantity of sherds from the Timurid period—mainly underglaze painted pieces—bears out the view that they were manufactured locally, probably by Syrian craftsmen transplanted by Tamerlane (cf. pl. XXI, 2a with A. Lane, *Later Islamic Pottery*, London, 1958, pl. 13a; pl. XX, 4 c with Lane, pl. 5 e-d). In his search for comparative material M. Gardin has rightly leaned heavily on the published finds of Soviet archaeologists working on sites north-east of the Oxus, especially in Tadzhikistan. He also refers frequently to the yet unpublished material found at Lashkari Bazar whose appearance is eagerly awaited.

D. S. RICE

From Mycenae to Homer. By T. B. L. WEBSTER. 9 × 5½. Pp. 312 + pls. 24. London: Methuen, 1958. 30s.

The fundamental premise of this book is Ventris's decipherment of the Linear B. Beyond that, the argument depends at many points on the acceptance of conjectural readings and equations proposed by the followers of Ventris, and on some speculative assumptions of present-day students of the language of the Greek epic. Finally, in the controversy over what is Cretan and what is Mycenaean the pendulum has swung far over to one side in recent years, and Prof. Webster is thus able to extend the title 'Mycenaean' to extreme limits in time and space.

The opening chapter sets the stage. The unity of the civilized world in Mycenaean times is well brought out. The literature and social organization of Egypt, Syria, Mesopotamia, and the Hittites are ransacked for parallels to the Mycenaean and found to yield much in common;

sometimes the evidence seems a bit strained—for instance, can the transportation of wine from country to city in Ugarit be held to confirm the distribution of wine from city to country at Pylos? But this survey is an interesting and instructive one.

Mycenaean art here is seen as including much of the acme of Minoan; and a great representational field is opened up to the search for figures and scenes of Greek religion and mythology. From this, and from arguments backwards from Homer, a picture of Mycenaean poetry is built up which appears comparable to that of Ugarit and (for what it is worth) the Hittites. The reader needs to realize that the limits between fact and speculation are not easy to define here, and that essentially the parts of the book which deal with Mycenaean art and poetry represent the author's own imaginative reconstruction. This reconstruction is distinguished by learning and ingenuity; but it seems too catholic and is marred by too ready acceptance of dubious (and sometimes irreconcilable) views of other scholars. If, for instance, the story of Helen and the great siege is much older than the fall of Troy VII A, if Ajax (like Hector) is an Early Mycenaean warrior, if Menelaus was originally an army commander, and Achilles a projection of Gilgamesh with a dash of the late Achaean sea-raider, can we fairly be asked to agree that the Catalogue of Ships (in which these various heroes have their place) is an authentic muster-roll of a Mycenaean expedition?

The later chapters, dealing with Geometric art and contemporary literature, are the best part of the book. Too much is perhaps made of the scraps of semi-legendary material and genealogy that pass as Dark Age history. But the discussion of late elements in Homer is well conceived, and there may be some value in the distinction of pre- and post-migration strata in the poems. The theme of the evolution of structural sense in the Greek Dark Age to a climax of scale and grandeur in the mid-eighth century is convincingly elaborated, and we may be grateful for the demonstration of the close connexion of the *Odyssey* with the *Iliad*. J. M. Cook

Mycenaean Pottery in Italy and Adjacent Areas. By LORD WILLIAM TAYLOUR, 9 $\frac{1}{2}$ × 7 $\frac{1}{2}$. Pp. 22+204. Cambridge: at the University Press, 1958. 55s.

This is an austere book. Fellows will not find entertainment here: that is not Lord William's purpose. The beauty of the southern sea is never allowed to obtrude on the beauty of the facts that are set before us. Fourteen plates of sherds, only three of vases, is a pretty severe diet; it would be more palatable and more informative if we had been given fewer sherds and those larger.

The book, however, has to be welcomed as a substantial contribution to knowledge. It had never before been stated how large the Mycenaean settlement near Taranto really was. No doubt now, that that, and probably others like it, as yet undiscovered, spread an influence which resulted in a local Geometric style along the south coast of Italy. Lord William has detected this style in new sites in the neighbourhood of Taranto. His detection of Rhodian and Cypriot influence in the Mycenaean colony of Taranto is convincing and interesting.

The detailed and authoritative catalogue of recent finds of Mycenaean sherds in the Lipari Islands and in Ischia is valuable.

Lord William's touch is much less sure when he introduces his new term (120), Iapygian Geometric. If it is identical with some aspects of the Borgo Nuovo deposit (152), is a new term required? Classification into: (a) fine painting, (b) coarse painting, is a bad one. Sooner or later both styles will turn up on the same vase. My impression is that the fabric lasted a long time and borrows from several different styles. I picked out the decoration of one sherd (pl. 14, 19) as likely to be Protogeometric and to have come from Ithaca. Pity that the reproduction is invisible. Lord William picked out another vase as like one in Ithaca (no. 3, fig. 21). Surely it was an error to call Heurtley's Protogeometric jug Geometric? Heurtley would have been cross. Other Protogeometric patterns could be picked out, but more patterns are like Greek Orientalizing

patterns (e.g. fig. 23, nos. 57, 60, 61, 64). All the references given for no. 61 show plain dicing; was it necessary to go to Antioch for Greek dicing? But no. 61 is actually a 'zed' pattern and popular in Ithaca. The only pattern that could be taken direct from Greek Geometric (fig. 24) is a mystery. Fig. 24 is said to be like a section of an angular bowl base: no base is apparent: it looks like the middle of a carinated bowl, but it is said to be like Furumark F 290, by him styled a 'conical bowl'. It is not apparent how fig. 24 is going to end in a cone like F 290.

After these few grumbles it only remains to welcome this scholarly account of Mycenaean civilization in the West.

It is cheering to hear that we should now look for Middle Helladic matt-painted ware, that is Middle Bronze Age Greek pottery, in these lands (see pls. 1, 2, 16).

SYLVIA BENTON

Satyrspiele. Bilder griechischer Vasen. Von FRANK BROMMER. 2nd edition. $9\frac{1}{4} \times 6\frac{1}{4}$. Pp. 92. Berlin: de Gruyter, 1959. DM. 18.

Professor Brommer in this second edition has altered the text in a few places, added about thirty new vases and a few new pictures. Unlike many less thoughtful scholars, he has kept his numbers the same and either given his new material 'a' numbers or added it at the end: *o si sic omnes*. He has added references to new discussions and has noted other interpretations generously either in text or catalogue, without, however, changing his views (I remain equally unrepentant, cf. *J.H.S.* lxx, 1950, 85). It is perhaps a pity that he did not bring his Paestan vases into line with Trendall (*P.P.S.* = *P.B.R.* xx, 1952, 1 f.). One of his former vases (no. 23) has been given added fragments by Beazley: the satyrs have spots on their body representing hair (cf. no. 5); Brommer interprets as tights, but if they are tights a loincloth is unnecessary; I think the painter saw a hairy loincloth and interpreted it as hair all over the body, represented as tights. A new cup (no. 14 a), unfortunately fragmentary, shows a spear-throwing stage-satyr on one side and on the other a woman and an astonished stage-satyr: Brommer says she rises from the ground, but if so, her body should be frontal; it is, however, profile and I think she must be seated as Beazley says; could she be Hera in the return of Hephaistos? The book is extremely useful, well indexed, and well illustrated, and all students of drama should have it.

T. B. L. WEBSTER

Paradeigmata—three mid-fourth-century main works of Hellenic architecture reconsidered. By KRISTIAN JEPPESEN. $11\frac{1}{2} \times 8\frac{1}{4}$. Pp. xviii + 162 + 88 figs. Aarhus University Press, 1958. (Jutland Archaeological Society Publications Vol. IV.) D.Kr. 50.

Jeppesen tackles three important buildings for whose reconstruction the available sources are varied and unusual. For the first, the Maussoleion, there are the blocks and sculptures recovered by Newton and others from Halikarnassos, as well as the descriptions of Pliny and other writers of this, one of the Seven Wonders. The second, the Philonean Arsenal in Piraeus, is known only from an inscription which records the contract and specifications; not a block from it has been recognized, nor is its exact location known. The last, the Ionic Portico for the Telesterion at Eleusis, involves a combination of the results of carefully observed excavation and the interpretation of various inscriptions, which include a contract for a project which was never put in hand.

Jeppesen reviews the evidence for the Maussoleion and suggests a reconstruction which does no great violence to the evidence and offers a wholly plausible appearance. His disposition of the sculpture is less happy, and though Maussollos and Artemisia are rightly displaced from the crowning chariot they should hardly be demoted to the rank of native votaries.

The main contribution to the study of the Arsenal is an attempt to rehearse the architect's own deliberate planning of the building and the proportions he intended for its various parts.

In the last part the history of the Hall of the Mysteries at Eleusis in the fourth century is reconstructed. Foundations were laid for an intended enlargement, never carried out; specifications were drawn up for an Ionic Portico, never built; and finally, the Doric Portico, designed by Philo, was contracted for and erected.

The many illustrations are clear and well drawn. Other classical buildings could profitably be restudied in a similar manner.

JOHN BOARDMAN

The Etruscans. By RAYMOND BLOCH. 8 x 6. Pp. 260. (Ancient Peoples and Places.) London: Thomas and Hudson, 1958. 25s.

So many books on the Etruscans have recently appeared that the subject has become familiar and the standard of quality required for new works to be acceptable has risen. All those readers who are familiar with M. Bloch's previous works had much to expect from him, and they will not be disappointed. Clearly planned and succinctly written, his book provides a welcome neutral corrective to the numerous works by Italian authors who have sought to belittle the oriental components of Etruscan civilization. M. Bloch has shown that it is impossible to give a rational explanation of the facts, all the facts, unless there was a migration into Tuscany from Asia Minor. Date, place, and scale remain to be determined.

Of all the problems presented by the Etruscans, that of their language remains the most obstinate and tantalizing. It has given us a number of words such as augury, auspices, and histron, yet although we can read Etruscan and even pronounce it, we cannot understand it. If Sir Leonard Wooley is right in thinking that the tombs in the neighbourhood of Sinope were constructed by those Etruscans who stayed at home, there is a chance that bilingual text may be found, in cuneiform perhaps. M. Bloch draws attention to the recent discovery that punctuation stops follow consonants at the end of syllables and also voiced consonants at the beginning of words, which may assist in the interpretation of texts. He also points out that the archaic Etruscan alphabets preserve the three original Phoenician sibilants samek, sadé, and shin, lost by Western Greek alphabets, which argues in favour of the derivation of the Etruscan alphabet from the Greek before the latter's differentiation into Western and Eastern types.

But here the book is marred by misprints from which the translator or the editor should have protected the author. On p. 69 the letter X gives the sound of *s*, not of *x*. It was not between 200 and 100 B.C. that Indo-Europeans came from the north (p. 61) but between 2000 and 1000 B.C. The legends to Plates 24, 27, 28, 29, and 30 are given under the numbers 27, 24, 29, 30, and 28, respectively.

GAVIN DE BEER

Die Funde der älteren Bronzezeit in Pommern, 7. Beiheft zum Atlas der Urgeschichte. Von KARL KERSTEN. 11 $\frac{3}{4}$ x 8 $\frac{1}{2}$. Pp. 111 + taf. 112 + folder map. Hamburg: Hamburgisches Museum für Völkerkunde und Vorgeschichte, 1958. DM. 33.

This is a straightforward illustrated catalogue of all finds, graves, hoards, and strays, within the old province of Pomerania that may be assigned to the first three Bronze Age periods of the Montelian system. The format is excellent. The items are given concise description with bibliographical references, and are catalogued consecutively throughout, from 1 to 1,023, and arranged by *Kreis*, working from Rügen in the west to Lauenburg in the east. The catalogue numbers correspond to those in the plates, nor are these confused, as so often happens, with any supplementary numbering of the figures. Every object is illustrated in a good clear line-drawing together with sections and lateral views where appropriate. The first plate for each *Kreis* contains a small

numbered map of find-spots. The folding map, in the end pocket, is at a scale of 1/600,000, and shows the distribution of finds as whether in graves, of which three forms are distinguished, earth or peat hoards, dredger finds, and earth or peat single finds. The older Bronze Age in Pomerania shows a predominance of types common to the West Baltic province, but the Oder provided a direct means of communication with the centre of the continent, and by this route came Hungarian bronze battle-axes as well as a variety of other objects from that, and 'Tumulus Bronze' sources. The number of bronze sickles is interesting in this connexion. Grave associations including bronzes, pottery, and flint daggers, are numerous. The pair of gold cups from Langendorf, which have their place in Western problems, are duly recorded. Would that we had regional documentation of this kind, a true tool for research, and great provincial museums with the will and means to publish it.

T. G. E. POWELL

España e Italia antes de los Romanos. Por PIA LAVIOSA ZAMBOTTI. 10 x 7. Pp. 363 + pls. 41. Publicaciones del Seminario de Historia Primitiva, Monografías II. Madrid, 1955.

In this extremely ambitious work the author sets out to interpret the prehistoric development of the west Mediterranean lands against the background of the prehistoric cultures of Europe, North Africa, and western Asia. She brings to the task a lively mind, a wide knowledge of the archaeological material, and a broad and miscellaneous store of general learning. Why, then, despite all this, is the result so curiously unsatisfactory?

It is, I think, largely the result of her method, an adaptation of the culture-historical approach which involves mixing purely archaeological evidence with considerations based on philology, folklore, and even mythology. Granted that a reaction against the sterility of a desiccating exclusive reliance on typology and stratigraphy is in many respects desirable, the sort of 'historical' reconstruction which results from an indiscriminate *mélange* of the above elements forced into the mould of a comprehensive theory of cultural development and diffusion on a world-wide scale may not be much improvement.

Where Sra Laviosa Zambotti is actually dealing with the archaeological evidence her suggestions are often original and interesting, but unfortunately her book is top-heavy with theory and with other kinds of material. The author calls her method humanistic, but I should prefer to describe it as rhetorical, in that facts of all kinds are marshalled as ammunition to support a thesis rather than evaluated impartially. It is not only in typology that over-confidence is possible. Dogmatism is an attitude of mind not confined to the following of any particular method.

J. D. EVANS

Fouilles de Glanum, 1947-1956. By HENRI ROLLAND. (XI^e Supplément à *Gallia*.) 10 $\frac{3}{4}$ x 8 $\frac{5}{8}$. Pp. 135, 47 plates, 15 figs., 9 plans. Index. Paris: Centre National de la Recherche Scientifique, 1958.

The town of *Glanum*, near St. Rémy-en-Provence, has been in course of excavation since 1921, and the present report describes the structures in which work was completed during the years 1947-56. The general chronology of the site is this: *Glanum I* is a Hellenistic town anterior to c. 100 B.C.; *Glanum II* is a period of Romanization which should start at 123 B.C., was intensified after the campaign of Marius in 103 B.C., and reached its peak with the fall of Marseilles and its domain in 49 B.C.; whilst *Glanum III*, starting in 49 B.C., had its richest constructional period during the last twenty years of the last century B.C., and was occupied under the Empire until A.D. 270, the date of the destruction of the town.

The most interesting structure discovered for the *Glanum I* period is the earliest phase of a

Nymphaeum (xxxvi). The original settlement was an agglomeration grouped round a spring to which were attributed supernatural and healing powers. This was first protected by a temenos inside which a rock-cut stairway wound downwards to an enlarged rock-cut basin for the spring, and the whole was included in the first Hellenistic stone wall of the town. A pre-Roman sculptured stone head was found in the basin. A sacred way, bounded by stone walls of early date, formed an approach to the spring entrance, which was itself entered through a carriage gateway furnished with a side postern for pedestrians. In the postern, a re-used stone pillar was found, carved with head-shaped cavities which included the remains of iron points, for the better fixation of the decapitated heads which may have been trophies set up by the Celto-Ligurians at this cult centre after the sack of Marseilles c. 125 B.C. Other structures of Period I which were excavated include a monument with a pediment (xvii), probably a small temple; a two-roomed building with a vestibule (xxviii), also probably a small temple or a treasury; a meeting-room of bouleterion type (xxix); an exedra (xxx); and a Doric portico (xxxii) which flanked the east side of the street leading to the entrance to the sanctuary. The portico may have served as shelter or waiting-room for pilgrims and invalids visiting the spring. The associated deity, attested by ex-votos and a bronze figurine, was the Gaulish god whose attributes were a hammer and an arm with an open hand, and whose Latin name was SILVANVS.

In the *Glanum II* period, under Massiliote influence, the *Nymphaeum* was refurbished in a monumental fashion. Further work on the House of Sulla (xii) suggested a revised dating within this period, and another house (xix) belongs also to this phase.

Much new work has been done on the structures of the *Glanum III* period. On the south of the site the structures of Periods I and II had been razed and an artificial horizontal platform was formed over them. On this was built a monumental ensemble consisting of a large porticoed court with decorated façades (xxii), with inside an important pillared monument (xxi), and an apsidal building (x). Whether the whole was a sanctuary or a forum has been left as an open question. An open square to its south had a fountain decorated with triumphal sculptures, probably celebrating the *Gemma Augusta* of 7 B.C., and a platform for a triumphal monument which had been decorated with a bas-relief of a captured Gaul. These structures, together with the twin temples to the west, and the well-known monuments of 'Les Antiques' (the arch and cenotaph), present a series of Augustan monuments of the greatest interest. An unusual discovery was made on the foundation blocks of the Period I exedra, incorporated in the base of the Period III platform, on which had been engraved an architectural graffito which amounted to a sketch view of part of the town. Indeed it served as a guide for the excavators in their work on the southern structures. Also, from the vicinity of the twin temples and a well between them, there was derived a statue of Lucius, the younger of the two 'Princes de la Jeunesse' to whom they were dedicated; a portrait head of their mother Julia, daughter of Augustus and wife of Agrippa; and one of Octavia, sister of Augustus. Also in this period a temple dedicated to VALETUDO (xxxvi) was built above the *Nymphaeum*, which bore an inscription of M. AGRIPPA, the benefactor of *Glanum*; and to its south was a *Fanum* of HERCVLES (xxxvii). Here six altars dedicated to the god were found in position surrounding his statue. The propylaea leading to the sanctuary were elaborated.

The wealth of architecture, sculptures, and inscriptions now published will command widespread interest, and they are adequately illustrated. With so much excavation and so many structures, only a series of publications could give the minutiae of detailed excavation reports that one would like to see. The inventory numbers of the finds would appear to be approaching the five thousand mark, and there must be scope for detailed studies of many of the smaller possessions of the inhabitants of *Glanum*, and perhaps for reconstruction drawings of the buildings and the successive towns in their superbly beautiful setting on the slope of Les Alpilles.

M. AYLWIN COTTON

Archaeological Finds on Lamma Island near Hong Kong. By DANIEL J. FINN, S.J., Ed. by T. F. RYAN. 9½ × 6½. Pp. ix + 278 + 65 pls. Ricci Publications, Ricci Hall, University of Hong Kong, 1958. 25s.

Hong Kong and the neighbouring islands have been held by Britain since 1841; a further 356 square miles of mainland 'The New Territories' was leased from China in 1898. But this is the first volume to deal seriously with any aspect of its archaeology and it is this that gives it its particular value. It must have long been realized that here was an area of vital archaeological importance since lying at the mouth of the Canton River it covers the crossways of two of the greatest and most historic trade routes in the East. But there has never been a Department of Antiquities or an archaeological officer there or apparently an antiquities law. It still lies at the mercy of a singularly energetic Public Works Department. It is only fair to add that sometimes that mercy is exercised. An intact *Han* tomb, complete with all its funeral furnishings, was found at Kowloon by the Public Works Department since the last war; it was not only spared but preserved. On the other hand the base of the palace of the last Sung emperor has recently been shovelled into the sea during the construction of new runways. This is the context in which this book must be judged.

The author describes how he first came across his finds. 'I almost crushed a piece of obviously old pottery underfoot as I walked past a sand heap on a jetty at Aberdeen (Hong Kong). I was on my way to town. On my way back past the same spot I picked up this time a piece of patinated bronze evidently a fragment of a weapon, probably a sword. Next morning I came deliberately with a friend and a shovel. The friend had the satisfaction of digging up a stone spear head weathered to a russet brown.' It was found that the sandheap had been brought across from Lamma, the rocky islet opposite Aberdeen. The present volume with its 65 admirable plates and 73 figure drawings is the record of his discoveries on Lamma between 1932 and 1936.

The Rev. Daniel Finn was at that time Lecturer in Geography at the University of Hong Kong. He had been trained in classical archaeology at Oxford before the 1914 war. He has been dead for many years. The volume has been edited meticulously by his friend the Rev. Thomas Ryan; the imprint suggests that it has only been published at last through private enterprise. The responsibility for its many serious flaws as an archaeological record must rest ultimately with the Colonial Government, not with the indomitable author. As he writes (p. 5), 'Such digging as I have attempted has necessarily been economical owing to the limits of slender private resources and personal endurance.' Many of his discoveries were made as he followed the coolies gathering material for Hong Kong builders: 'the woman's shovel revealed at one sweep a clump of fragments' (p. 4). In consequence there is no adequate stratigraphic record and often considerable doubt as to the exact provenance of his finds. In view of this it is hard to share his preconception that the objects belong to a single culture which he is inclined to place between 500 and 250 B.C. Possibly c. 1000 B.C. to c. A.D. 100 might be more tenable.

The Lamma finds fall into three groupings. Group A consists of a quantity of stone implements of palaeolithic type and fragments of a coarse thick ware. Group B may have vital implications for the pre-history of the Pacific. Dr. Heine Geldern has listed the characteristics of a culture which he associates with the discovery of the outrigger canoe and with megalith building. He had found traces of it in forty sites in South-East Asia and the Pacific as far as Polynesia. The characteristic weapon is the rectangular stone axe. The pottery is wheel-made and the typical decoration is the pattern of a mat imprint, stones were worked with a circular borer, or with a saw, spear-heads are of polished schist and arrow-heads of bone, long cylindrical stone beads were used as ornament and there are many stone rings, possibly a form of currency. All this has been found in profusion on Lamma Island (pp. 46 *seq.*). It is, of course, possible that it was a continental outpost of the culture; it is geographically rather more likely that it lies in a diffusion centre.

Group C provides evidence of primary importance for the origins of Chinese art. It will include the Lamma bronze sword with zoomorphic pattern which was placed in the British Museum by Dr. Shellshear (together with an ornamented bronze adze and dagger). Fragments of bronze halberds, over forty bronze arrow-heads, and many variants of knives and spear-heads are recorded in this volume. Often they have *ornaments* which seem to derive ultimately from an animal style. With this is associated a pottery animal statuette, sherds of proto-porcelain and stoneware incised with freehand decoration. Most important of all are six fragments of glazed pottery ornamented with the typical 'double F' spiral. It seems likely, as the author suggests, that at least groups B and C represent a continuous culture which became surcharged with Chinese influences perhaps passing down the Canton River or more likely down the sea route from the north. The author was perhaps mistaken in concentrating so exclusively on Lamma. In December 1957 and in January 1958 I carried out an archaeological survey in the New Territories and in the islands at the mouth of the Canton River. Specimens typical of Lamma have now been recorded from nine other sites. Cheung Chan Island and Lan Tao Island may prove particularly important. But they have nowhere been found in such profusion. Possibly at Lamma they were often ritual offerings; for the fantastic rock shapes on the island would make it a fitting shrine for a hagiolithic people. As the author wrote so many years ago, 'What the site demands is a thorough, careful, and immediate excavation in order to discover whatever coherent testimony is still preserved.'

GERVASE MATHEW

Soils for the Archaeologist. By I. W. CORNWALL. 10 x 6½. Pp. 230 + figs. 19. London: Phoenix House Ltd., 1958. 50s.

Soils have long been looked upon by archaeologists as substances to be removed with all expedition in the disinterment of relic or monument; yet, on the application of appropriate techniques, they can often be more informative regarding the past than the fragments they mantle.

After an introductory note, Dr. Cornwall's book is divided into four parts, and there is a brief technical appendix besides a valuable bibliography and a comprehensive index. It is illustrated with line-drawings. Part I, entitled 'Archaeological Deposits', examines the characteristics of the manifold contexts in which are found the concomitants of man, or even man himself, from the Pleistocene Period to Para-historic times. Subsoils are assessed and reasons are propounded for settlement thereon and exploitation thereof. The discussion of the action of earthworms is of inestimable value as is also the study of silts and fillings. Part II, 'Weathering and Soils', orders, defines, and explains the mechanics of soil formation. Formative environment is the basis of classification and the reader is adroitly guided through the unfamiliar but largely self-explanatory terminology of the subject. Parts III and IV deal with laboratory work. It is claimed that certain elementary physical and even chemical methods of investigation which need little equipment are possible undertakings for all but the determinedly unpractical. An exposition of the interpretation of the results obtained by the application of the author's methods and casebook examples comprise the concluding chapters.

Soil Science as applied to archaeology is a subject which Dr. Cornwall has made peculiarly his own. For a decade he has aided us with our problems, while urging all who excavate to note well the significance of soil weathering. Puzzling features of some monuments, such as barrows, become immediately explicable when considered in terms of soil notation. Mounds recorded as built of 'burnt material and white sand' can be seen as the results of podsolization, others described as underlain by 'brown clay' are now shown to have been set up upon a brown earth. Furthermore, by these means we can more keenly appreciate prehistoric environments and even obtain hints of relative dates.

This book is not only a welcome but also a significant expression of concepts which have in

many ways changed our methods and approaches to excavation as a prime aid to the recovery of knowledge of the past. It is noteworthy that it is a product of a virile and objective British School of European Archaeology which was begun more than a half-century ago by the practical genius of General Pitt-Rivers, who himself attacked some of the problems of chalk ditch weathering, the processes of which have been lucidly tabulated by Dr. Cornwall.

By its nature the text makes concentrated and not always easy reading. None the less it is a sound and efficient tool, pleasingly produced in the way that Phoenix House has taught us to expect. Notwithstanding, I feel that this scrupulously presented record of equally scrupulous field and laboratory research might with advantage have been illustrated by photographs in addition to the austere line-drawings. Even had extra expense been involved, the significant subtleties of soils so presented would have considerably tightened the rapport between author and reader, an objective always desirable but sometimes difficult with unfamiliar material.

No archaeological library, institutional or individual, can afford to be without this important book.

PAUL ASHBEE

Millin Bay: A Late Neolithic Cairn in Co. Down. By A. E. P. COLLINS and D. M. WATERMAN. 10½ × 8½. Pp. 84 + 19 pls. + 17 figs. Belfast: H.M.S.O., 1955. 18s.

This excavation, and the report on it here reviewed, both deserve the closest study not only for their intrinsic interest but also as models of technique and presentation.

The site, lying in an unusual position close to the shore, consisted of an oval cairn covering a long, narrow subterranean cist, in which at one end were a number of disarticulated inhumations and a cremation. Between a kerb of upright slabs bordering the cairn, and an outer setting of free-standing stones, were seven small cists containing cremations. Pottery was confined to fragments of Loughcrew ware, not necessarily contemporary with the building of the cairn. Beneath and earlier than the site was a remarkable dry-stone wall of unknown purpose.

A number of slabs built into the cist and cairn were decorated, both in the pecked technique otherwise characteristic of the Boyne passage graves and with incised linear patterns of a kind already recorded from Secondary Neolithic contexts in western and northern Britain. These form a valuable addition to the repertory of megalithic 'art'.

It is one of the ironies of archaeological research that a site on which so much skill had been lavished should turn out to be virtually *sui generis*. However, the authors have made excellent use of a few partial analogues that exist, and conclude that the cairn should be referred most probably to the middle of the second millennium B.C.

R. J. C. ATKINSON

The Celts. By T. G. E. POWELL. 8 × 5½. Pp. 283 + pls. 79. London: Thames and Hudson, 1958. 25s.

This is a valuable short book for all concerned with the Iron Age, though it is not the easy reading it appears at first glance. It provides a scholarly and up-to-date introduction to the Celts as a whole, which has been lacking in English since de Navarro's contribution to the *Cambridge Ancient History* (vol. II, ch. 2, 1928). The author is fortunate in that his knowledge of languages enables him to draw on a wide range of literary and archaeological material and to include much that is unfamiliar in the excellent set of plates, notes and bibliography.

Mr. Powell does not set out to produce a regional survey of the Celts in Europe: his first chapter 'Finding the Celts' deals with sources of knowledge, with the origins (including a rather superfluous summary of Europe from the dawn, pp. 28-44), and with the Iron Age development of the Celtic peoples. Thereafter he discusses aspects of these barbaric people that interest him—*The Celts in Life* and *The Celtic Supernatural*. It is difficult to do justice in a brief review to the

wealth of detail that these chapters embody or to the way in which literary evidence is used to illuminate archaeological material and vice versa: good examples will be found in the description of Celtic warfare (pp. 103-9). Students of Roman Britain will find much of interest in the account of Celtic religions, which embodies the work of Prof. P. Lambrechts and the late Dr. Jacobsthal. The Celtic contribution to the religious amalgam of the Roman provincials is less obvious in Britain than in Gaul, for with notable exceptions much of our material is inadequately published; Mr. Powell's book underlines the need for its collection and synthesis.

The final chapter, the 'Celtic Survival', is less successful: in it history and philology seem to have ousted archaeology. The Ogham stones, the early Pictish symbols, the Irish metal-work are a testimony to the continuing vigour of the Celtic peoples in the West in the fifth to seventh centuries and are surprisingly omitted from the text and illustrations.

AILEEN FOX

Wessex before the Celts. By J. F. S. STONE. 8 × 5½. Pp. 207 + 72 pls. + 22 figs. London: Thames and Hudson, 1958. 25s.

By the untimely death of Dr. Stone we have lost a leading figure among the vigorous and devoted researchers, amateurs only in name, to which British archaeology owes so much of its peculiar vitality. In spite of the heavy responsibilities of his work in the Government service, he found time over more than twenty-five years for a brilliant series of excavations on Salisbury Plain; and in addition, through his researches into the petrology of stone axes and the identification of faience beads, he achieved an international reputation as a pioneer in the application of science to archaeology.

In this posthumous book Dr. Stone has summarized for the general reader the main outlines of Wessex prehistory from the beginning of the third to the middle of the first millennium B.C. As he freely admits, the geographical position of Wessex, open to direct influences from west, south, and east, and lying athwart some of the principal transinsular routes of the Irish metal trade, has produced a cultural pattern of peculiar complexity, to which it is impossible to do full justice in so small a compass. Yet even though many controversial points of interpretation have been passed over of necessity in silence, it is still clear from the exceptional concentration of ritual monuments and the richness of the barrow-graves clustered around them (here illustrated by an admirable series of new photographs) that the primacy of Wessex is real, and is not due merely to a disproportionate concentration of research in the area in modern times. For his part in enlarging our understanding of this nodal region in European prehistory Dr. Stone will not be forgotten.

R. J. C. ATKINSON

The Archaeology of Wessex. By L. V. GRINSELL. 6 × 8½. Pp. xv + 384 + 15 pls., 18 figs. and 6 maps. London: Methuen, 1958. 30s.

This book fulfils a great need. In spite of the archaeological importance of Wessex, no author has previously written an account of its antiquities and field monuments which is of practical value to the general public and also useful to scholars.

The *Archaeology of Wessex* is broad in scope. The author's subjects are the antiquities and the earthworks of ten counties; they range in time from Upper Palaeolithic to Pagan Saxon. The book is arranged chronologically, first the material culture and then the earthworks of each main period being described, and filled out with maps and plans, drawings of objects, and some excellent aerial photographs.

The general reader is well served by summaries of current opinion on the succession of people who have imprinted their character upon the gentle landscape of Wessex. He is particularly appealed to by the gazetteer of existing sites which ends the book. Nearly one thousand places are

listed, classified, and provided with a two-figure map reference. This, together with an exhaustive list of museums in Wessex and outside it which contain material from the area will enable him to see for himself the places and things to which Mr. Grinsell has devoted so many years of study and analysis.

For the scholar, a series of lists—barrow-types and their grave-goods, late Bronze Age enclosures, field systems, Roman lead pigs, potteries, and tile kilns—form a useful basis for research. Of maps, those showing the Avebury region and Roman remains in and around Dorchester are new and useful.

Mr. Grinsell achieves admirably what he has set out to do, presenting clearly a wealth of detail and colouring it with dashes of charming extraneous facts and folklore in a manner peculiarly his own.

NICHOLAS THOMAS

Scotland before History. By STUART PIGGOTT; illustrated by KEITH HENDERSON. 8½ × 6. Pp. viii + 112, with 32 woodcuts. Edinburgh: Nelson and Sons, 1958. 15s.

Professor Piggott here gives an up-to-date account of Scottish pre-Roman archaeology with its natural environment and constant reminders of its European connexions. The form is an extremely readable essay, without references, bibliography, or index, but embellished with black-and-white illustrations by Keith Henderson that are as instructive as they are sensitive and vigorous. It is indeed now a rare experiment, as archaeologists, priding themselves on being scientific, shed the artistic imagination of the book-illustrator along with Druids and Phoenician merchants.

While designed specifically for 'the reader who is not an archaeologist', the text contains ideas that are newly expressed and information that will be fresh to most readers; but the recognition of Shetland's retarded Neolithic culture as a whole, has come too late for mention. The section on the pre-Roman Iron Age is particularly good.

There are a few slips of the pen, a provocative reiteration of Circumpolar Stone Age and some doubtful statements: mixed-oak forest is surely much less in evidence than birch and alder. It would be interesting to have elaborated into an essay on its own the warning that the advance of knowledge, particularly in the north, has made it harder to substantiate Fox's still valuable distinction between the cultural reactions of Lowland and Highland Britain.

R. B. K. STEVENSON

Inyanga. Prehistoric Settlement in Southern Rhodesia. By ROGER SUMMERS, with contributions by H. B. S. Cooke, P. V. Tobias, H. Wild, J. F. Schofield, and K. R. Robinson. 9½ × 6. Pp. xviii + 336; 22 plates, 58 text figures. Cambridge: at the University Press, 1958. £2.10s.

Inyanga is the comprehensive name of a geographically diversified region of Southern Rhodesia, covering over 2,500 square miles, and marching with the Portuguese East African frontier; it includes lowlands, uplands, high plateaux, mountains. Most of this extensive area is strewn with stone ruins of disputable age. These consist of so-called enclosures, forts, huts, stone-walled pits, monoliths, cairns, water-channels. Terrace walls in scores of serried lines contour the slopes in fantastic multitude; their access is by way of metalled paths and broader track-ways. Local granite and dolerite provide the building material. The origin, age, and purpose of this vast complex of past and unrecorded activity; the relation of its separate parts to each other, and to Zimbabwe and other more formal Rhodesian monuments, has been little more than a guess, although Randall MacIver, after some inevitably cursory field-work in 1905, declared its comparative modernity (twelfth to fifteenth century A.D.) and native construction. The last conclusion is now fully confirmed.

The present volume, resulting from reconnaissance in 1949 and some six months' excavations at carefully selected spots in 1950-1 by Roger Summers (National Museum of S. Rhodesia) and K. R. Robinson (Inspector of Ancient Monuments), sets the wide and very intricate problem on the sound basis of modern archaeological technique, assisted by reports on the fauna, flora, beads, and human fragments, from well-known authorities. Obviously an area of this size and complexity cannot yield all its vital information in six months or six years; much remains problematic, some conclusions must be tentative. That much discounted, a core of incontestable fact based on the stratigraphy has provided invaluable material for the future to amplify. A pre-building Iron Age culture—the Ziwa—with fine pottery was demonstrated: the absolute dating for this is still precarious, though the possibilities of c. A.D. 600 to 800, or, alternatively, c. A.D. 1200 to 1400 are carefully examined. The later date would have the advantage of reducing the gap before the various 'ruin-builders', believed to have been active between c. the fifteenth and eighteenth centuries, appeared. Would not C 14 help to clear this up? It is nowhere referred to.

The wisdom of the Inyanga Research Committee in allotting the work to investigators steeped in the lore of Rhodesia rather than to 'guest' archaeologists, however eminent, has been richly rewarded in the high quality and balance of the work performed.

G. CATON THOMPSON

Antike Reiterstandbilder. By HARALD VON ROQUES DE MAUMONT. 9½ × 6½. Pp. 102+50 text-figs. Berlin: Walter de Gruyter, 1958. DM. 16.

This is a valuable, finely produced, and well-illustrated monograph on a hitherto somewhat neglected topic. The equestrian statue first arose in archaic Greece, in the 'horsey' aristocratic circle that surrounded the Peisistratids. This association served to discredit the art in democratic Athens, where it made but a few minor, mainly funerary, appearances during the classical period: the only large-scale rendering of a mounted rider comes from the eastern outskirts of the Greek world—the torso, now in London, from the Mausoleum of Halicarnassus. The earliest identifiable true portraits of equestrian type are those of Alexander; and the Hellenistic monarchies provided the social and religious setting in which the genre could fully develop. There is no sure trace of the motif either in Rome or elsewhere in Italy before the late second century B.C., when it arrived in the West as a direct borrowing from Hellenistic Greece and proceeded to flourish there during the succeeding century beneath the stimulus of the late-republican cult of family ancestors. Under the Empire only the monarch and members of his family had the privilege of equestrian effigies in Rome itself; and here the author does full justice to the Capitoline Marcus Aurelius as one of the great outstanding masterpieces of ancient iconographic art. Outside the capital the equestrian statue came to be the prerogative almost exclusively of equites: the early imperial marble portraits of the two M. Nonii Balbi from Herculaneum are the sole surviving representations of consulars on horseback.

The author tells his story clearly and vividly. His main conclusions and most of his identifications of individual works are acceptable, while a few minor criticisms may be made. For instance, I can see no signs of a tomb on the relief at Stockholm (p. 51, fig. 25). Not all equestrian figures of emperors on coin- or medallion-reverses need be direct copies of major statues (p. 61, fig. 31). On p. 64 and in the caption to fig. 33 Maximianus Herculus appears as 'Maximinianus Herculus'. The author rightly laments (pp. 86-87) the fact that the two splendid gilt-bronze equestrian statues found at Pergola in 1946 still lack a full-dress publication. But he seems to be unaware of the fine reproduction of one of the best fragments in *Fasti Archaeologici*, iv, 1951, no. 3344, fig. 53, a source from which he could surely have obtained a photograph.

J. M. C. TOYNBEE

Römisches Buntglas in Köln. Von F. FREMERSDORF. 11 $\frac{1}{2}$ × 8 $\frac{1}{4}$. Pp. 58 + Taf. 128. Verlag der Löwe, Köln. Dr. Hans Reykers, 1958.

The Cologne collections are undoubtedly the most important for the study of Roman glass in the West and this first volume of a proposed series of ten brings together a useful, representative selection of the coloured glass, polychrome and monochrome, moulded and free blown, including some which was destroyed during the war.

The catalogue is divided chronologically into two parts, the larger being given to the first century, the great period of coloured glass. The second part covers the later second and third century, the time when the Rhenish industry was at its peak, and all of the vessels listed are probably locally made. The coloured glass of the fourth century, with the exception of two examples of gold glass, is omitted, presumably because it will be treated in the tenth volume.

In each part the vessels are grouped according to the technique of decoration and the undecorated glass by shape. This is a very clear layout which makes for easy reference. Every piece is illustrated by a half-tone or colour plate. The text gives a description of each (unfortunately omitting such technical details as the rim finish, etc.), the presumed origin and date, together with a selection of useful parallels and a bibliography, which is invaluable as neither the catalogue nor the two-page introduction allow space for the discussion of controversial points, e.g. the dating of No. 109, which, in spite of the Breslau parallel, would seem more likely to belong to the first century than c. A.D. 300. The great merit of this, as of any catalogue, is that it pulls together a large group of scattered material. D. CHARLESWORTH

Roman and Native in North Britain. Edited by I. A. RICHMOND. 9 $\frac{1}{2}$ × 6 $\frac{1}{2}$. Pp. x + 174 + 8 pls., 6 figs. and 8 maps. Edinburgh: Nelson, 1958. 18s.

This attractively produced history of the northern frontier of Roman Britain has aimed both at taking into account the archaeological work done since Collingwood's treatment of the subject in the *Oxford History*, and at giving more substance to the opposing peoples. Different aspects are well balanced, while there is scope for the special interests of the five contributors. Only occasionally too much detail is given, such as a road list as well as a map, or too little, as when the dates of Agricola's campaigns are not told nor the archaeological evidence for the years A.D. 100–22. Inevitably more attention is paid, until the fourth century, to the forward areas than to the garrisoned country in the rear, yet it would have been relevant to have an estimate of those garrisons in the second century and the extent to which they were on a care and maintenance basis, even though a complete 'order of battle' may still be far from possible.

Professor Piggott supplements the prehistoric background he gave in the previous volume of the series (*The Problem of the Picts*) by a study of the Britons' basic economy, which he divides geographically into corn-growing and ranching. Mr. John Clarke has to sketch the preliminaries to Agricola's advance as well as its consequences. Knowledge of the west flank and of the frontier in Strathmore has altered the picture considerably since 1937, but such is still obscure. On the native side, the *oppidum* overlooking Newstead is in puzzling contrast to that on Traprain Law if its maximum extent really is pre-Agricolan, and if it is not, the political conformity of the Votadini and the intransigence of the Selgovae may have to be revised. (Bonchester is a minor site only.) The poverty of Scotland, except in men, is well stressed by citing the greater quantity of Roman coins and objects found in East Prussia, far from the Roman armies.

Mr. Gillam leaves little of Collingwood's interpretation of Antonine policy. He considers that the new wall did replace the earlier and that the population in its rear was not deported—but the number of non-Roman-period forts in Gordon Childe's now old map must not be forgotten. Though the Antonine outposts lay near the Tay, the map of first- and second-century dress-fasteners shows, and those of pre-Antonine glass bangles and dragonesque brooches would bear

it out, that the two walls and the area between formed a cultural and trading unit from which objects scattered southwards but rarely northwards. From other finds, however, Mr. Gillam argues rather unconvincingly for a 'protectorate' as far as Aberdeen. Next, Collingwood's lukewarm attitude to Severus's successful campaigns is abandoned by Dr. Steer. Unfortunately archaeological detail is still scarce or contentious: even Dr. St. Joseph's more recent proof of two series of marching camps from the Borders into Aberdeenshire makes the smaller Agricola and the larger ones either Severan or of an otherwise unknown Antonine campaign.

Lastly Professor Richmond fills out rather than alters his predecessors' account of the sweeping changes in the fourth century, while accepting a later date for Cuneda that brings the story down to about 450. He also has a valuable chapter on the ancient geographical sources for Britain north of Cheviot. But how did Severus come to deal with the Maetae after the Caledonii? And Dealginross is not below Dundurn but across a ridge 4 miles away.

R. B. K. STEVENSON

Excavations at Clausentum, Southampton, 1951-1954. By M. AYLWIN COTTON and P. W. GATHERCOLE. 11 x 8½. Pp. ix + 169 + pls. 6. Ministry of Works. Archaeological Report No. 2. London: H.M. Stationery Office, 1958. 45s.

This is the second of the Ministry of Works new Archaeological Reports series, and deals with the Roman port at Bitterne, where the Ministry was able to sponsor excavations in advance of the loss of most of the site to building. Mrs. Cotton not only records here the main work of 1951 in a publication fully up to the best modern standards of production, but puts us further in her debt with a summary of past discoveries, including the inscriptions. Mr. Gathercole adds a short note on the 1954 excavations. This needed more thorough editing; his pottery, for instance, is extravagantly reproduced at half-scale.

The main body of the book consists of an analysis by Mrs. Cotton of the coarse pottery. Systematic study of Roman pottery from stratified levels is badly required, and Clausentum, drawing from both the New Forest and Farnham industries, is especially suitable. Yet valuable though this study is, it cannot be consulted without care. It may therefore be helpful to suggest improvements which could be applied to the method. Its essence, of course, is to isolate a series of types of proved date-range, which is also an economy, since each type need only be illustrated once. Here the types are not separately illustrated, nor is the date-range always clearly stated: an indication such as 'one example from X c' necessitates a further search. The pottery is illustrated in excavated groups, which naturally contain residual material. Fig. 26 for instance, 'Pottery from Period VIII levels. Third century to c. A.D. 350/370', contains 27.5 per cent. material earlier than this, a pitfall for the casual user. Finally the code signs used in compiling the type series (Type BkCo, or JSGt1) are irritating; a numbered sequence would have been clearer. Yet these are points of detail and must not obscure our gratitude for the careful work of excavation and analysis, and the fine production. May we soon see many more such Ministry reports.

S. S. FRERE

Denmark before the Vikings. By OLE KLINDT-JENSEN. 8½ x 6. Pp. 146 + figs. 16 + pls. 73. (Ancient Peoples and Places, IV.) London: Thames and Hudson, 1957. 21s.

Dr. Klindt-Jensen writes with confidence befitting a Chief Curator at the National Museum, showing a zeal for archaeology which looks through the specimens to the lives and aspirations of the ancient Danes. A succinct text and crisp illustrations call back the national past from the earliest times to the onset of the Viking age. The organization and administration of archaeology in Denmark are not left undescribed.

Klindt-Jensen speaks from the richness of an inheritance, to which he has contributed successfully—the noble inheritance of Danish archaeology, of enthusiasm and thorough professionalism, system and inspiration, scholarship and a liking for mud on the boots. This book is a most attractive guide for the general reader; and more is achieved, for no serious student of British archaeology, professional or amateur, teaching or administering, should fail to read it thoroughly to seek a standard for himself.

HUMPHREY CASE

Atlas of the Early Christian World. By F. VAN DER MEER and CHRISTINE MOHRMANN. Translated and edited by MARY F. HEDLUND and H. H. ROWLEY. 13 $\frac{1}{2}$ × 10 $\frac{1}{2}$. 42 maps + pls. 614. London: Nelson, 1958. 70s.

There has for long been a crying need for an atlas of the Early Christian world; now that need is supplied by means of the forty-two excellent maps and plans which constitute the first half of this book. The maps embrace the area of the Eastern Mediterranean, Italy, Spain, and Europe south of the Danube–Rhine line, including Britain. They show not only the distribution of the sites of churches and Christian monuments of all kinds, but also the routes of pilgrimage, monastic contacts, and so on, and the boundaries of provinces and dioceses. There are also plans of the more important Early Christian cities. In addition to the maps the book contains no less than 614 separate reproductions of buildings, sculptures, paintings, and objects dating from between the first century and about A.D. 600. The plates are excellently printed, and the selection is astonishingly comprehensive. There is a very full index. The maps and plates will prove of equal use to specialists and students, and for the more general reader the short introductions to the various sections in which the plates are grouped will prove equally useful, and will serve to make the appeal of the book even wider. It is to be most heartily recommended, and authors and publisher are alike to be congratulated. It is to be hoped that it will prove possible to bring it up to date from time to time, as new discoveries are made, and also that it will prove possible to follow it up with a similar volume or volumes on the Medieval period.

D. TALBOT RICE

Early Christian Ireland. By MÁIRE and LIAM DE PAOR. 8 × 5 $\frac{1}{2}$. Pp. 264, 36 line-drawings and maps and 76 half-tone figs. London: Thames and Hudson, 1958. 25s.

This book, in the excellent Peoples and Places series, is the first balanced account of Early Christian Ireland to appear in this country. It sets out to provide an account of the period from both the historical and archaeological standpoints; Mr. and Mrs. de Paor have tackled their task with wisdom and have accomplished it in triumph. The literary style of the book is excellent; lightness of touch has purged the usual laboured turgidness of archaeological description and has made it most readable. Archaeologically it is sound and, although one occasionally wishes that the authors had been a little more definite in their attributions, they have maintained with ease the rather difficult balance between Irish nationalism, on the one hand, and Northumbrian over-enthusiasm, on the other, in their interpretation of the art of the period.

In the chapter on the art of the 'Golden Age' they have retained most conservatively the more or less accepted chronology; in some respects this is disappointing; for instance, I would have liked them to have come down in favour of a late-seventh-century date for the Ardagh chalice rather than distinguish it by the broad statement of an eighth-century attribution. One can have no comparative complaints in the chapter entitled 'Renaissance and Reform'; here the authors have sorted out the intricacies and interrelations of Irish Ringerike and Urnes and added an excellent passage on Irish Romanesque architecture. The most interesting and useful

chapter is that entitled 'The Life of the People'; here are combined the archaeological, legal, and historical evidence so that a picture is built up of the life of Irish society in this period. It is unfortunate that the authors did not discuss in a more detailed manner the tools of the peasants, but the sections on husbandry, communications and dress are excellently handled and should stimulate further work in this field.

DAVID M. WILSON

Irish churches and monastic buildings. II. Gothic architecture to A.D. 1400. By HAROLD G. LEASK. 9½ × 7¼. Pp. xiv + 162 + 28 pls. Dundalk: Dundalgan Press, 1958. 35s.

In the second volume of his survey of Irish medieval ecclesiastical building, Dr. Leask describes the development of Gothic architecture from the later twelfth to the end of the fourteenth centuries, prefacing his account with a useful summary of the monastic orders and the planning of their establishments. With the introduction of the Cistercians in 1142, Ireland was enabled to draw freely from the main stream of western European architecture, but the reception of the Transitional style was at first hesitant and tempered by native Romanesque tradition. The account (chapter iv) of what Dr. Leask distinguishes as a 'School of the West', flourishing, for the most part west of Shannon, in the early thirteenth century and but lightly touched by outside influences, is a particularly revealing study. The English invasion of 1169 brought a quickening in building activity, initially at the hands of the greater religious orders; but it was the cathedral churches raised by the invaders, linked stylistically with the west of England whence were drawn not only craftsmen but building-stone as well, that were to influence the development of Irish Gothic during the first half of the thirteenth century, and beyond. This building boom was maintained throughout the century, borne on the rising tide of English power; but thereafter, following the Bruce invasion and the chaotic conditions that ensued, new ventures were brought to a standstill. To the whole of the fourteenth century scarcely a dozen buildings can be ascribed.

Within the space of 150 pages the development of the Gothic style in Ireland is described with a firm emphasis on essentials, its progression illustrated by shrewd analyses of the major monuments, with notes on a further fifty lesser buildings included in an appendix. To have produced so readable an account, without sacrifice of detail, is a tribute to Dr. Leask's felicity of prose. Possibly a few other buildings might, with advantage, have received mention: a description of the well-detailed mid-thirteenth-century windows, re-used in the curious S. annexe to the nave, at St. Multose, Kinsale, would have been useful and the scanty list of early-fourteenth-century works could have been augmented by reference to the cusped window tracery at Inistioge, Co. Kilkenny; but no significant structure has escaped attention. Little documentary evidence relating to the construction of the buildings described is available, and Dr. Leask has perforce largely to depend for dating on stylistic arguments, which he handles always in a sober and convincing manner. In very few cases is the reviewer disposed to disagree with the author's findings; at Athassel, Co. Tipperary, however, the constructional sequence can hardly be as straightforward as that proposed, but the site is a complex one and in a condition which makes close study difficult.

The book is well produced and illustrated by the author's delightful draughtsmanship; the sections of mouldings and other details are particularly welcome for comparative purposes. It may be noted that the captions on plates vi and xx have been transposed and there is some confusion among the footnotes in chapters vi and vii.

The value of Dr. Leask's work cannot be overstated, for it makes available not only a mass of data unobtainable elsewhere, but also expresses the mature views of a distinguished architectural historian. With this volume, and the author's *Irish Castles*, the full range of English medieval building in Ireland is accessible to the student. For the ensuing native revival in architecture we look forward with interest to the third, and final, volume of Dr. Leask's masterly survey.

D. M. WATERMAN

Sylloge of Coins of the British Isles. Fitzwilliam Museum, Cambridge. Part I, Ancient British and Anglo-Saxon Coins. By PHILIP GRIERSON. 10 x 7½. Pp. xxii + 70 + pls. 32. London: Published for the British Academy by the Oxford University Press, 1958. 35s.

In size, weight, and arrangement this is an eminently usable book; more so, in the first respect, than its larger classical predecessors. It is, of course, intended for students, and from them a word of praise and thanks should go, not only to its careful author but also to Mr. Christopher Blunt and to Sir Frank Stenton, who has written a foreword, for their long and successful efforts to bring this first volume of a long series to the light of publication.

The book deals with Ancient British (including Gaulish intruders) and Anglo-Saxon coins only. It may seem a little arbitrary to have left out Roman coins struck in Britain and British copies of Roman coins, but perhaps these have never been quite accepted into the British series, and certainly their inclusion in the present work would tend to throw it sadly out of balance apart from delaying its appearance.

Most of the text consists of descriptions of the coins, clearly and accurately set out, as one would expect from Mr. Grierson. His introduction contains interesting notes on the collections which make up that of the Fitzwilliam Museum, and a happy tribute to Mr. H. T. Shrubbs, who gave skilled and devoted service to the Coin Room until his retirement in 1957. The author's occasional explanatory notes in the catalogue are pertinent and helpful.

The nomenclature of Gallo-British coins is still a vexed question, and Mr. Grierson has side-stepped the difficulty by putting the Gallic tribal names in inverted commas. One must then admit that 'Early Atrebatian Derivatives' is open to question as a term for the early British staters. If I am not mistaken, no. 43 on plate II is a Gallic coin rather than British (see Brooke, *Num. Chron.* 1933, pl. XIII, 8). The obverse is twisted in the plate, which tends to confuse recognition. This misalignment is noticeable in several instances such as plate I, 4 (reverse) and II (reverse), plate II, 32 (reverse) (noted by the author), plate V, 136 (reverse), and plate VI, 166 (obverse).

Mr. Grierson mentions on page xxi that the Anglo-Saxon coins have been arranged in order of types in chronological sequence from the reform of Edgar to the Norman Conquest, but he has used for convenience the type-numbering of the *Catalogue of English Coins in the British Museum, Anglo-Saxon Series*. The revision owes much to the work of Mr. R. H. M. Dolley on the Scandinavian hoards, which is chiefly to be found in the *British Numismatic Journal*, listed in the bibliography on page xxii, and also in his paper 'Some Reflections on Hildebrand Type A of Æthelræd II' in *Antikvariskt Arkiv*, Stockholm, 1958.

I am informed that all the short-cross coins of Æthelred II in the Fitzwilliam collection belong to the third issue of that type, as one would infer from their position in the catalogue at the end of the reign. I would suggest that where gaps occur in the collection, such as the absence of the first two short-cross issues, it would remove the possibility of confusion if they were mentioned. Mr. Grierson has read the reverse inscription of no. 742 as ELFPIN ON LVNDN, but to me the legend appears to be ELFPI MON LVNDN.

Among the *Crux* coins of the same king, no. 643 is said to come from the same reverse die as 'no. 2'. This should probably be 'no. 642'.

One other criticism is perhaps of some consequence. This refers to the quality of the plates. The study of the minutiae of coins and of die links demands plates of the first quality, and many of the plates in this book fall short of it. Up to plate xx most are good. From there onwards, with one or two exceptions such as plate xxiv, there is insufficient contrast for good clarity. No doubt this matter can easily be improved in future editions. Even the forgeries (or particularly the forgeries), which have wisely been included at the end, one would like to examine in very great detail.

H. DE S. SHORTT

Medieval Archaeology. Journal of the Society for Medieval Archaeology. Vol. I. 1957. Ed. by D. B. HARDEN. 9½ × 7¼. Pp. v + 184 + pls. 20. London: The Society for Medieval Archaeology, 1958. £2. 2s.

If any justification were needed for the formation of a new society for Medieval Archaeology, it is fully vindicated by the first volume of their Journal. Messrs. Wilson and Hurst are to be congratulated on a brilliant performance, not the least valuable portion being their own survey of medieval field-work for 1956. Mr. C. A. Ralegh Radford brings the vexed question of the Saxon house up to date, and this is reinforced by Miss Rosemary J. Cramp's article 'Beowulf and Archaeology'. Mr. D. M. Wilson's study of 'An inlaid iron folding stool in the British Museum' furnishes a nice piece of detailed research, and incidentally the small human heads on it reminds us of those in the centre of the large bowl from St. Ninian's. It is suitable that the Dark Age period pioneer, E. T. Leeds, should be represented here, and Miss Sonia Chadwick has edited his 'Notes on Jutish Art in Kent between 470 and 575'. Nor are the latest scientific aids forgotten, and Messrs. Justin Schone and Lowther provide a survey of 'Tree-rings and Medieval Archaeology'. Mr. Reay Robertson-Mackay writes on 'Recent excavations at the Cluniac Priory of St. Mary, Thetford, Norfolk', and Miss E. Carus-Wilson provides a delightful piece of later research in 'The Significance of the secular sculptures in the Lane Chapel, Cul-lompton', with the emphasis on the cloth not the wool trade as being the chief industry in late medieval England. Finally, and of the highest merit is Mr. W. A. Pantin's admirable survey of 'Medieval priests' houses in south-west England'. The new Journal deserves a great welcome from archaeologists.

MARGARET WOOD

Medieval England: a new edition rewritten and revised. Edited by AUSTIN LANE POOLE. 9½ × 6. Vol. I: pp. xxviii + 381. Vol. II: pp. xiii + 382-661. Oxford: at the Clarendon Press, 1958. 70s.

The progress of medieval studies in the last generation is apparent in two volumes issued to supplement *Medieval England*, 1924, though not to supersede it. Sources of fresh knowledge come from the publications of the Public Record Office, of an increasing number of local record societies, and the series of the Canterbury and York Society and the Surtees Society. Excavations on sites of castles, manors, and religious houses, aided by air photography, have been undertaken by the Ministry of Works and archaeological societies; the opening of a mound in Suffolk in 1939 revealed the Sutton Hoo Ship Burial; excavations at Sempringham in 1938 and 1939 resulted in the discovery of the foundations of the fine fourteenth-century priory church larger than Ripon and Bristol.

Excellent plates of illustrations take the place of figures in the edition of 1924, some taken from the collections of photographs at the Courtauld Institute and the National Buildings Record. Twenty-seven out of thirty-five illustrations chosen by Mr. Boase for the chapter on art are new, including the purse lid from Sutton Hoo, the Adoration of the Kings from the Missal of Robert of Jumièges, probably executed at Winchester in the first quarter of the eleventh century. The Percy tomb at Beverley, hitherto known as that of Lady Eleanor (*ob.* 1328) is named Lady Idoine (*ob.* 1365).

There are two fresh subjects, the English Landscape and Science. Mr. Hoskins has skilfully envisaged changes which followed the foundation of small market towns, and the development of sheep farming at the expense of agriculture which led to numerous deserted villages in the fifteenth century, particularly in the Midlands. Mr. Crombie has contributed an interesting chapter on Science with novel illustrations; the study was pursued at Oxford, especially in astronomy, mathematics, and medicine, by Fellows of Merton. It was, however, in the University of Paris that Alexander Neckam studied for his work, *De Naturis Rerum*, and he had taught in the grammar

schools at Dunstable and St. Albans before he entered the monastery at Cirencester. Mr. Crombie's belief that the Dover Castle Clock, now in the Science Museum in London, is one of the earliest true clocks of which the mechanism is definitely known is a fallacy lately exposed by Mr. Howgrave Graham (*Transactions of the Newcomen Society*, vol. i, xxix: 'New Light on Ancient Turret Clocks'). The Salisbury Cathedral Clock, c. 1386, is now established as the oldest fairly complete clock in the world.

There are two maps of great interest, one drawn by Matthew Paris about 1250, and the Gough map of the early fourteenth century with a commentary on the method of the draughtsman. Communications were probably more dependent on the weather than is suggested; liability to repair roads and bridges was often disputed. Although in three winter months 1200-1 King John rode immense journeys from the Channel coast to the far North with heavy trappings in long carts, the disaster in October 1216 is not mentioned. His whole baggage train, horses, wagons, treasure, wardrobe, and many of his household were lost in the estuary of the Nene, swallowed up in quicksands (*Archaeologia*, vol. lxxx, p. i). Professor David Knowles has thrown new light on the organization of the Church. Sir James Mann has written on Arms and Armour; Mr. Anthony Wagner on Heraldry. The chapter on Military Architecture by Mr. Arnold Taylor is outstanding as an instance of fresh treatment arising out of his discovery of the builder of Edward I's castles of North Wales, Master James of St. George. Dr. Lane Poole has contributed a chapter on Recreations with twenty-three delightful illustrations; the game of golf from a manuscript executed at Bruges early in the sixteenth century. Instances of the keeping of bears as pets perhaps explains an entry in the Ely sacrist roll of Alan of Walsingham in 1334-5, 'bread bought at times *pro ursula*'. A curious omission is the history of settlements of Jewish families in a number of towns before the expulsion in 1290, e.g. at Lincoln to the stone house of Aaron the Jew (*ib.* 1189). A recent photograph of the damaged corbel supporting the figure of the Synagogue on the judgement porch of Lincoln Cathedral shows a Jew wearing on his breast the badge of yellow taffeta six fingers long and three broad ordered by Edward I in the *Statutum de Judaismo* of 1275. Errors and misprints are few: i, p. xii, plate 23, the picture of London in the fifteenth century is not in the Bodleian, but in the underline of the illustration, the correct reference to B. Mus. is given; p. xx, plate 108b, 'Arche' for 'Archers'; p. 227, there was no nunnery at Minchinhampton: p. 529, '1348' (Archbishop Langham) for '1367-8'; p. 562, fig. 105, 'Melone' for Milone.

ROSE GRAHAM

Medieval England: an Aerial Survey. By M. W. BERESFORD and J. K. ST. JOSEPH. 11½ × 7½. Pp. 274 + 117 plates + 28 maps. Cambridge: at the University Press, 1958. 45s.

This contribution to Cambridge Air Surveys will be received with admiration and gratitude by students of the Middle Ages; the partnership of Dr. Beresford's appreciation of the visual aspects of medieval economic development with Dr. St. Joseph's skill has produced a valuable introduction to historical topography. The main topics are the village, the town, and the extractive industries, and each photograph is accompanied by comments and references to documentary sources. The collaboration is most telling when a Tudor estate map, of the centre of a village or of part of its field system, can be seen side by side with a modern aerial photograph, but these are only particular instances of Dr. Beresford's use of such sources as manorial surveys, tax lists, and the like. His familiar views on the coincidence of surviving ridge and furrow with medieval strips are restated with impeccable restraint. Archaeologists would have welcomed a closer interest in such earthworks as those which divide one parish from its neighbour, village tofts and crofts from open fields, and deer park from open field and waste. The limitation of this study of the ebb and flow of human activity is that it is based on the Midlands, the classic home of open-field

agriculture; the vicissitudes of rural England south of the Thames and east of the Test are not so susceptible of record by Dr. St. Joseph's camera, and practical difficulties, frankly admitted, have meant that the highland zone is under-represented. The second limitation is also imposed by Dr. St. Joseph's camera: the oblique view, taken from a fairly low level, can do justice to a whole village, such as one of the green villages of the northern counties, or to detailed aspects of parish topography, but is less than adequate when a clear view over several miles is required. It implies no lack of gratitude for the immense contribution that Dr. St. Joseph has made to British archaeology to wish that special vertical photographs could be taken by someone with his discernment.

The section on towns deals with such features as the market-place and the walls, the large religious institution and the harbour. It is most effective in laying before the reader's eye the small borough of pre-Conquest origin, the planned foundation of the twelfth and thirteenth centuries, or the Elizabethan ramparts of Berwick-on-Tweed. One would have liked to see views of towns whose defences have vanished but left their mark on street plans and property boundaries; among so many examples some features can presumably be seen from the air without risking a collision with the parish church or the town hall, and they would have drawn attention to a neglected aspect of urban topography. The group of photographs of industrial sites contains new and largely unfamiliar types, such as Lincolnshire salterns, Derbyshire lead mines, Yorkshire iron mines (a remarkable photograph), and Kentish use of water power for iron-working. The inclusion of a group of industrial villages such as Lavenham and Castle Combe is justified by the notes on their economy and social structure. Although one may wish for more photographs, and for attention to aspects of medieval topography which were perhaps regarded as unsuitable in a book designed for the general public, the final word must be of congratulation to each author on his choice of collaborator, and to both on the results.

M. W. BARLEY

European Armour, circa 1066 to circa 1700. By CLAUDE BLAIR. 9 x 5½. Pp. 248 + 300 figs. London: B. T. Batsford Ltd., 1958. 35s.

For years there has been a demand for a handy, authoritative, well-illustrated and modestly priced history of European armour, and Claude Blair's book meets this need quite satisfactorily. It covers over six centuries, beginning with the age of mail of the time of William the Conqueror, and continuing with the gradual development and decline of plate armour; the evolution of the various elements of a harness are clarified with 234 line-drawings; the author explains the characteristic features of the work of the great artist armourers of Italy, Germany, and England, and there are significant chapters on the methods of making and decorating armour. There are also fifty half-tone illustrations of distinguished paintings and sculpture representing armour, as well as of extraordinary examples of armour from the world's great national and private collections. The author is to be congratulated in having a perfect score in so far as the authenticity of the illustrated objects is concerned.

We are brought up to date on much of the recent research of scholars, including the making of mail, a field in which English students have made distinct contributions. In explaining mail-making, Blair states that "The 'closed' rings were probably punched out of a thin sheet of metal". Since the statement is a qualified one, perhaps he also should have stated that some competent students believe that the 'closed' rings are welded and not stamped.

In general, the author has judiciously steered clear of controversial matters. Obviously neither his book, nor this review, is the place to argue for or against the Italian or English origin of the Genouilhac armour, or to discuss the complicated aspects of the French royal armoury. In discussing the work of the Augsburg etcher, Daniel Hopfer, Blair inadvertently introduces a

controversial matter. He adds a signed etched sword blade to the known works of Hopfer, but there are competent students who are convinced that this etching is a forgery.

The Select Bibliography is a useful guide and the Index is excellent for it gives full text and figure references. Under the various parts of a harness, such as arm-defences, leg-defences, helmet, etc., are also given the numerous technical names by which these elements are known. The polyglot terminology of armour always presents problems and the author has made a commendable effort to be accurate and consistent in the use of terms, but some modern jargon, like 'frog-mouthed helm' and *Kastenbrust* (why not use the English word?), has crept in. Also foreign terms like *Zischägge*, *Stechhelm*, and many others, tend more to confuse than to enlighten the novice. A glossary, as well as a diagram indicating the nomenclature (contemporary and modern) of the elements of a harness, would have been welcome.

One must, of course, expect a limited coverage in both text and illustrations in a handy volume compendium of a subject that involves the art, history, and technology of many countries during several centuries. Claude Blair's book lives up to the high standard which one would expect from an official trained at the Tower Armouries.

S. V. GRANCAY

The Bayeux Tapestry. A comprehensive survey by SIR FRANK STENTON (General Editor), SIMONE BERTRAND, GEORGE WINGFIELD DIGBY, CHARLES H. GIBBS-SMITH, SIR JAMES MANN, JOHN L. NEVINSON, and FRANCIS WORMALD. 12 x 10. Pp. 182 + 150 illustrations. London: Phaidon Press, 1957. 47s. 6d.

Improbably, a set of photographs made under difficult conditions in 1871 for the British Government remained the basis for photographic reproduction of the Bayeux Tapestry until the Phaidon Press—all honour to Dr. Horovitz—commissioned Mr. Hennell to make the photographic record in 1956 from which the plates in this book have been prepared. They are the *raison d'être* for the present work. The clarity of the larger scale colour-plates, intensified though it is by slight heightening of the true colours, is very impressive: even the repairs to the laid and couched stitchery (e.g. pl. 11) are distinguishable, an advantage not shared by the half-tones of comparable scale in which the stitches are blurred. The half-tones, for which the degree of reduction has had to be great, have inevitably lost in detail. Nevertheless the reproduction throughout is of high standard and the nearest approach to verisimilitude so far obtainable. The whole Tapestry is illustrated in small, selected parts in great detail, but the scale ratios are not given (approx. 1:4, 1:2.3, 1:2, 1:1.5, with minor variations).

The plates are accompanied by a sectional text contributed by specialists: 'Style and Design' and the 'Inscriptions' by Professor Wormald, 'Technique and Production' by Mr. Wingfield Digby, 'Arms and Armour' by Sir James Mann and the 'Costumes' by Mr. Nevinson; it will be seen that the range of subjects is selective. Sir Frank Stenton discusses the 'Historical Background', Mlle Bertrand outlines the 'History of the Tapestry' and Mr. Gibbs-Smith comments on the plates. A Select Bibliography and an Index, of names and places, complete the book. The pagination is eccentric and the period pastiche on p. 9 may not be to all tastes.

Arbitrary selection properly governs comment in a brief notice, and here recognition may first be made of the difficulty that faces the specialist in discussing the arms and armour portrayed when the Tapestry itself is the main visual source of our knowledge of the armaments of the period; actual examples are few and they much damaged. The helmet at Prague, for instance, which is like those on the Tapestry may well have been St. Wenceslas's own and thus, as Sir James says, a century earlier than the Conquest; again, research upon the manufacture of mail is only beginning and close dating here, too, is hazardous: fragments dug up at the Viking town of Birka (fig. 34) are comparable with a shirt (fig. 38) from Kungslena in Västergötland that may well be from the battlefield of Lena and thus a century and a half after the Conquest. The fact

is that the rate of change of fashion during the period was immensely slow and not that the picture presented of the arms and armour at the Conquest is inaccurate; extraneous evidence goes to prove its accuracy. It is surprising therefore to find Mr. Nevinson questioning generally the Tapestry designer's representation of his contemporaries. Even more surprising in the context is the neglect of the contemporary documentary sources, the *Song of Roland* for example.

The Vercelli mosaic (fig. 29) is noticed to illustrate the particular, but in the wider context of style and design the earlier fragmentary mosaic from Acqui, now at Turin, makes arresting comparison in general and particular with the Tapestry, particularly in the light of the known influence of northern Italy on Norman Romanesque. This is not to question Professor Wormald's conclusions, which carry conviction. It would be interesting to know Mr. Gibbs-Smith's evidence for saying that the Tapestry was probably designed by an English monk and carried out by English craftswomen (p. 162), or again, turning to modern history, why Mlle Bertrand (p. 80) leaves unstated the point of the 1803-4 exhibition of the Tapestry in Paris—Napoleon's propaganda for the invasion of England—in so many words, unless it be the fault of her translator.

Somewhat captious criticism may well be called churlish in face of the obvious rightness of the choice of specialists called in, the scholarship of their contributions and the generally high standard of the book production. But the fact is that the *Bayeux Tapestry* is not the book it should have been, and could have been with the subvention from the Pilgrim Trust: certainly it is not the 'comprehensive survey' of the sub-title. The Tapestry is one of man's great possessions. Surely it is time an inclusive—exhaustive, might even be risked—monograph was devoted to it. Despite the remarkable discoveries of recent years concerning mound-and-bailey castles and early timber buildings which show that the Tapestry is the *locus classicus* for their portrayal, this aspect of the matter is not considered. Instead the statement is made that 'the buildings so charmingly portrayed . . . bear no relation to the actual buildings of the day' (p. 163), which is quite untrue. Here was the opportunity for correlation and comment profitable to knowledge of the Tapestry and of early building. Nor is the furniture considered in any detail. More grievous is the lack of information that could have been obtained from scientific examination: on the one hand, assessment of the number of embroiderers, the progress of the work and the extent of restoration indicated by differences, however slight, in technique, material, and colour; on the other hand, the results of microscopic study of the materials, analysis of the pigments and colour-tests, the only information indeed that is likely to reveal the processes that produced the Tapestry. Thus it is impossible not to compare the *Bayeux Tapestry* adversely with, for example, the *St. Cuthbert Relics*, a work much more nearly commensurate with the importance of its subject. And the misfortune is that the publication of this beautiful book must postpone indefinitely the appearance of the monograph on the Bayeux Tapestry.

A. R. DUFFY

The Sicilian Vespers. By STEVEN RUNCIMAN. 8½ × 5½. Pp. xiii + 356. Cambridge: at the University Press, 1958. 27s. 6d.

Sir Steven Runciman has chosen a wide canvas and has given in broad sweeps a colourful and on the whole convincing picture of the thirteenth-century struggle for domination in the Mediterranean world, centring in the brilliant but cold and arrogant Charles of Anjou, who inherited the ambitions of the Normans of South Italy and the Hohenstaufen. He skilfully shows how the massacre of 1282 was more than a Sicilian revolt: it was the outcome of farflung diplomacy stretching from Aragon to Constantinople. The strength of his book lies in its swift arresting narrative; its weakness in over-simplification and on occasion a tendency to pro-Byzantine bias. For instance, on p. 5 he states that a Byzantine expedition to recover Sicily 'was only thwarted by the distraction of the Norman invasions of Byzantine Italy' and supports this by a reference

to Ostrogorsky's *History* (pp. 293-4), which in fact relates what happened, namely, that a successful Byzantine campaign in the island was cut short by the recall of the Byzantine general Maniaces to Constantinople due to intrigues against him at the Byzantine court. Or again, the account of the behaviour of the Franks at the battle of Pelagonia (p. 47, 'They made no attempt at resistance but rushed headlong from the field') should now be compared with that of D. M. Nicol (*Despotate of Epirus*, pp. 180-5, with a careful statement on sources). Though Runciman, like Nicol, cites Geanakoplos's study on this, he appears to be very selective in his use of the original sources.

But this is an eminently enjoyable book.

J. M. HUSSEY

Sculpture at Chartres. Text by PETER KIDSON, photographs by URSULA PARISER. 9½ × 7½. Pp. 64 + 117 photographs. London: Tiranti, 1958. 18s.

For all students and serious-minded visitors, the recent work of Dr. Kidson and Miss Pariser affords a welcome addition to previous literature on the subject. Free from abstruse technicalities, it offers a guide to the marvels of Gothic sculptural art at its zenith, easily comprehended by those who have no specifically scientific knowledge of the subject. The authors have shown a laudable detachment from the extravagantly individualistic theories which have enjoyed considerable currency in the past, and have approached the various problems arising in the course of their study—such as that of the priority in date of the choir over that of the nave—with discretion and success, at the same time frankly admitting the relatively few instances where no factual identification has appeared reasonable.

The introduction is, perhaps, the most valuable individual feature of the work, affording an excellent setting for the understanding of what is to follow. More stress, however, might have been laid upon the change in theological ethos evolved during the twelfth century, plastically manifested in the representation of Christ not as Universal Judge, but rather as Perfect Man, of which the sculpture of Chartres forms the apotheosis.

The photographic illustrations and their captions are excellent and the text is notably free from minor errors, although on page 44 the reference to St. Germain-des-Près in Paris should have been worded 'the new abbey, now known as St. Germain-des-Prés'.

J. PELHAM MAITLAND

The Incised Slabs of Leicestershire and Rutland prefaced by A Brief Manual of Incised Slabs. By F. A. GREENHILL. 10 × 7½. Pp. xii + 256 + pls. 42 + maps 2. Leicestershire Archaeological and Historical Society, 1957. £2. 12s. 6d.

Since the days of Boutell, Cutts, and Creeny the study of incised slabs has been almost completely neglected in England. This is particularly surprising in view of the fact that monumental brasses, which are so closely related to the slabs, have probably received more attention during the last 120 years than any other group of objects found in English churches. Fortunately, thanks largely to the efforts of Mr. F. A. Greenhill and the late Mr. H. A. Beetlestone, the balance is now being redressed and the present volume is intended to be the first of a series in which all the incised slabs of the British Isles will be recorded.

The book consists chiefly of a descriptive catalogue of the slabs of Leicestershire and Rutland, including many that are now known only from the notes and sketches of earlier antiquaries. Mr. Greenhill has not been content merely to record, however, and his catalogue is full of the most useful genealogical and heraldic information relating to the persons commemorated by the slabs. As a preface he gives an excellent and much-needed survey of British and continental slabs in general, and as an appendix a county list of incised slabs bearing effigies recorded in this country up to the end of 1957. The book is handsomely produced and the forty-two half-tone plates are

of uniformly excellent quality. In short, it is a model of its kind and should be owned by everyone seriously interested in the study of church monuments of all types.

C. BLAIR

Minor English Wood Sculpture, 1400-1550. By ARTHUR GARDNER, F.S.A. $7\frac{1}{2} \times 6\frac{1}{2}$. Pp. 42 + 170 illustrations. London: Tiranti, 1958. 21s.

The expressed purpose of this book is to introduce the general reader to the varied interest of the figures carved upon bench-ends in medieval churches and it should fulfil this purpose admirably. In 40 pages of text Mr. Gardner begins by noting the different character of the bench-ends in each of the three regions where such figures are mostly to be found, East Anglia, the East Midlands, and the West Country, and ends with a note on the scanty evidence available as to the identity of the carvers. The remaining pages explain the subject-matter of the carvings, which ranges from dignified religious subjects to amusing baberies. Special emphasis is laid upon the animals derived from the Bestiaries and some of the moralized actions and attributes which enable even very crude carvings of these to be identified are explained. The 170 photographs testify to the technical skill and lively characterization of these village carpenters and the larger illustrations do full justice to their achievements. The plates occasionally suffer from a sense of uncomfortable compression, but this is a small price to pay for having so wide a range of illustration and comment within so small a compass.

M. D. COX

Notarial signs from the York archiepiscopal records. By J. S. PURVIS. $6\frac{1}{2} \times 7\frac{1}{2}$. Pp. xxii + 100. London and York: St. Anthony's Press, 1957. 30s.

The long history of the notary public in England has been little investigated. Canon Purvis's short preface does not claim to throw any fresh light on the subject, but serves to introduce a hundred plates of notarial signs on documents in the York archiepiscopal records ranging from the fourteenth to the eighteenth century. The anonymous photographer has done his work admirably and has been well served by the publishers of this attractively produced volume. The editing evokes a few minor grumbles, e.g. the scale of the photographs is not shown, and modern forms of identifiable place-names are not included. But the book is a further sign of the vigorous and enterprising interest in local history so evident in York.

J. C. DICKINSON

Art and Architecture in Italy, 1600-1750. By R. WITTKOWER. $10\frac{1}{2} \times 7$. Pp. xxiv + 426 + 192 pls. Pelican History of Art, Harmondsworth, Middlesex: Penguin Books, 1958. 70s.

Although it is now more than thirty years since English writers began to play a part in the rescue of Baroque art from the limbo of 'false taste' to which it had long been consigned, no comprehensive book on Italian Baroque art has so far appeared. Professor Wittkower's volume in the Pelican History of Art has therefore been eagerly awaited; and patience is, for once, well rewarded. All readers must be filled with admiration and gratitude for this splendid and scholarly survey of a complex period in which a flood of works of art surged over Italy. One of the most remarkable features of a very remarkable book is the way in which this teeming activity is conveyed, while at the same time separate currents are isolated and analysed both for their own character and for the part they play in the main stream. Professor Wittkower has put a lifetime of study of Roman Baroque, particularly of its architecture and sculpture, at the disposal of students; though it must not be thought that he neglects painting. He treats it slightly less fully than the other two major arts, but the main problems are summarized and illuminating parallels are drawn. Nor does he write only of Rome. It is true that eighteenth-century Venice is less well served; but the field assigned to him was too vast for a scholar of his perception and pertinacity to

concentrate into so short a space; for he is never content to give a second-hand generalization, and by his method of close analysis has something fresh and stimulating to say about, for instance, so relatively familiar a building as S. Maria della Salute in Venice. Moreover, his account of architecture in Piedmont will come as an exciting surprise to those who have so far thought of Baroque art mainly in terms of Rome.

The size of his field has compelled him to write a longer book than the earlier volumes of the series, and consequently the proportion of plates to text appears less generous. The plates, which are well reproduced, are chosen with enormous skill, but here and there an argument would have been easier to follow with fuller illustration. The printing is good, the bibliography comprehensive; but the index is quite unworthy of the book.

MARGARET WHINNEY

The Victoria History of the County of Leicester. Vol. 4. *The City of Leicester.* Ed. by R. A. McKINLEY. 12 x 8½. Pp. xx + 483. Published for the University of London Institute of Historical Research by Oxford University Press, London, 1958. £6. 6s.

The Victoria County History is history written according to a plan. The modification that has allowed a whole double-sized volume to be devoted to a single town only emphasizes this. Within this space it has been just possible to plan a history of Leicester—since 1066—on the same comprehensive lines as succeeding volumes will presumably adopt for parish histories.

The great advantage of a planned history is that its authors are not allowed to dodge the dull or too familiar bits. We are given 'the whole works'. 'Political and Administrative History 1066–1509' is followed inexorably by 'Social and Economic History 1066–1509' and so on, with slight variations, period by period to the present day. There follow articles on manufacturing industries; on education; on the topography and architecture of the ancient and of the recently included parishes. Finally, Catholicism, Nonconformity, Charities, and other miscellaneous subjects are swept up in the net. The reader is free to pick what he likes and the sectional arrangement makes this easy. No doubt some veterans will turn at once to 'Political History since 1835' to fight battles over again or to recall parental fervours and childish enthusiasms.

There is, of course, a price to be paid. Leicester has been fortunate in her medieval historians and some contributors have been obliged to dig over well-worked ground. Others have had to condense much original research into a bare summary: they must have found material for a whole volume in the social history of the nineteenth century alone. One or two dealing with special subjects in detail, and bound to a time-table, may not have fully explored local sources of information.

This volume will not be, one hopes, the last word on Leicester, but it will be welcomed, by all who appreciate sound history, as the most complete and balanced survey to date. Those for whom local histories are the basis for comparative studies will find it an essential book of reference. Those for whom Leicester is the birthplace, or the abiding habitation, or the County Town will learn from what roots they or their neighbours have sprung.

It is only possible here to say of the individual articles that the standard of scholarship is uniformly high. There are some good maps and a number of delightful illustrations, very well reproduced.

C. D. B. ELLIS

Valley on the March—A history of a group of manors in the Herefordshire March of Wales. By LORD RENNELL OF RODD. 8½ x 5½. Pp. xv + 297 + 17 pls. London: Oxford University Press, 1958. 42s.

This well-written book deals with a group of manors, long in possession of the author's family, on the Welsh Border, in Herefordshire; the treatment is detailed, and obviously competent. The land and landscape: pre-Norman, Domesday, and medieval records: land and townships under

the Tudors: and land transactions in the seventeenth century, are the principal subjects. Old field plans, genealogical tables, and the one-inch Ordnance maps, with photographs, well illustrate these themes.

The treatment of Offa's Dyke, however, which crosses the region and which is the reviewer's chief interest cannot be regarded as wholly satisfactory. The recognized alignment from Rushock Hill to Lyonshall is indeed recorded, but the attempt to show a more easterly line vaguely referred to in the *Gwentian Brut*, must be regarded as a failure. The only visible bank-and-ditch structure known to the reviewer in the area is Rowe Ditch, a self-contained defensive work of a well-known type (the 'cross-valley dyke'), which will have protected early farmsteads and settlements in the Pembrokeshire district—as indeed the author recognizes.

CYRIL FOX

Spitalfields and Mile End New Town (The Parishes of Christ Church and All Saints). Survey of London, Vol. XXVII. General Editor: F. H. W. SHEPPARD. 11½ × 8¾. Pp. xvii + 348 + 108 pls. and map in end pocket. The Athlone Press, University of London, published for the London County Council. 1957. 50s.

This is the second volume of the Survey of London to be produced under the new régime and the general editorship of Mr. F. H. W. Sheppard. It is the joint work of Mr. P. A. Bezodis, Senior Historical Research Assistant to the Clerk of the Council, and Mr. Walter Ison, Architectural Editor of the Survey, and is a worthy successor to that dealing with South Lambeth. These two volumes present a remarkable contrast. South Lambeth is an area which for the most part was still open country in the early nineteenth century, whereas Spitalfields was already established as a flourishing suburb, almost immediately outside the City walls, at the end of the seventeenth century, and the precinct of St. Mary Spital had been a place of residence from the late Middle Ages. Most antiquaries and historians, as well as the general reader, will therefore be likely to find this volume of greater interest than its predecessor, which was, to some extent, a descriptive catalogue of rather dreary suburban development and nineteenth-century changes in land tenure—but not, however, to be despised on that account.

The medieval site and the history of the Priory of St. Mary Spital is adequately described, and so is the adjoining area of the old Artillery Ground. The volume incorporates the material of an important survey made in 1909 of the area of Spital Square, most of which has been destroyed or altered beyond recognition since that survey. The neighbourhood is, however, still rich in eighteenth-century domestic buildings, notably in and around Fournier Street on the Wood-Mitchell Estate; but how many of these buildings will continue to exist and for how long is extremely doubtful. This publication is, in consequence, a most valuable record of what we have already lost in the immediate and more distant past, and are very likely to lose in the near future. The Survey Committee has, therefore, been exceptionally fortunate in commanding the services of Mr. Walter Ison as its Architectural Editor, for Mr. Ison's earlier independent and monumental works on Bath and Bristol have shown in no uncertain fashion the way these things should be done.

Nearly thirty pages are devoted to an admirable account of the history and building of Nicholas Hawksmoor's noble Christ Church, the outstanding monument of the area, and one which we can surely be certain is safe from the hand of the destroyer. This account has benefited from new research carried out by Mr. Ison and Mr. Bezodis, who has been responsible for the presentation of all the historical matter.

Throughout the volume are scattered architectural drawings of many kinds, elevations, sections, details, estate layouts. These are model examples of this kind of thing and are the work of Mr. F. A. Evans and Mr. A. H. Grogan and others of the Historic Buildings Section of the Architect's Department of the Council.

The growth of Spitalfields Market, the activities of the Eastern Counties Railway, the later development of Mile End and other matters nearer our time have all been adequately dealt with. Format and layout are always the subject of differences of opinion. Here the text is in double column, the references at the end of the text, and the plates following the index.

Finally, for all who are interested in events in London following the Revocation of the Edict of Nantes, this volume will be of great value.

S. J. GARTON

Star Chamber Stories. By G. R. ELTON. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. 244 + pls. 4. London: Methuen, 1958. 21s.

This is a book which would have delighted the late F. W. Maitland, than which there can be no higher praise. In these six stories Dr. Elton gives the general reader the chance to taste the real stuff of which history is made. The disappearance of the formal records of the Star Chamber—they were probably burnt by the Long Parliament and not merely lost as Dr. Elton says—makes the reconstruction of a case a hard task. In this the author has been successful. He introduces us to a gallery of Tudor characters, nervous abbots, sharp business men, bibulous clerks, quarrelsome burgesses, that mixture of frailty and folly that makes human beings lovable. More important, in every story there is seen the wise and humane policy of Thomas Cromwell, a statesman who has not yet received fair treatment from historians.

T. D. TREMLETT

Old Guns and Pistols. By NOEL BOSTON. $8\frac{1}{2} \times 5\frac{1}{2}$. Pp. 159. London: Ernest Benn Ltd., 1958. 21s.

The author of this small work is, perhaps, better known as a war-time lecturer rather than a writer on his subject, and his book, although often amusingly written, is marred by mistakes and poor illustrations. For a 'Practical Handbook for Collectors' which aims to provide information 'essential for the identification of ancient firearms' the author has been ill-advised to rely on such crude drawings of unrepresentative and often broken specimens. As for being a 'concise history of guns and pistols from the earliest times', the author's rather cavalier attitude may be judged from the first page of his chapter on the Origin of Firearms, where he accepts the dating (in 1850) of a Chinese cannon as 618 B.C. on the grounds that it has never been disputed. Much of this and the subsequent chapters—The Evolution of the Revolver, Proof Marks, Rifling and American Firearms—has been taken extensively from the standard works by Pollard, George, and Greener. No attempt has been made to embody the results of recent research and, indeed, the one quotation from the *Calendar of State Papers* is incorrect. The list of British and some American gunsmiths, also copied from previously published lists, suffers likewise. Of the fifty-four proof and makers' marks illustrated, at least ten are quite wrongly attributed. However, one cannot dispute Canon Boston's enthusiasm for his hobby and his chapter on the Duel and the Duelling Pistol leaves one with the regret that he did not confine his efforts to this aspect.

H. L. BLACKMORE

Pattern and Purpose: a Survey of Early Celtic Art in Britain. By SIR CYRIL FOX. $10\frac{1}{2} \times 8\frac{1}{2}$. Pp. xxix + 160 with 80 plates. Cardiff. The National Museum of Wales. 1958. 45s.

Iron Age art in Britain, our first great achievement beyond the rectilinear, has hardly attracted its due study. It is most fitting that Sir Cyril Fox should give us a survey of his thoughts on 'the whole three centuries of it' as a culmination of his numerous papers and monographs (p. 171). He goes far beyond ornament and form, which he relates to the functions of the things adorned, and explores their social and historical implications. His book is therefore planned in human terms, in time, space, and purpose, an essay in treating such material as an historical document. In this Sir Cyril is really a pioneer.

He rightly stresses the high accomplishment of British Iron Age art, and there is a mounting

impression of distinctiveness from the continental. It has dynamic quality, 'on the move or on the leash' (p. 141, the last a particularly happy phrase). It is the art of an aristocracy and as such provides some substitute for our lack of the rich chieftain-graves as seen in Europe.

After a general introduction Sir Cyril deals with the beginnings of Celtic art in Britain, in the third century B.C.—'bronzes held to be imported' (pp. 1 ff.)—but how many really were? Few would pass unobtrusively among continental grave-groups, and as with the early dagger series (pl. 10), there is a strong impression of continental trained craftsmen at work for a British clientele.² It is rightly noted (p. 1) that some of the earliest pieces will have set a fashion or created a demand among the Iron Age A folk, and there is simultaneous mention of the early daggers and the Long Wittenham Iron Age A settlement (p. 4). Much attention is given to locating the workshop areas in this early phase (pp. 22–31, 144); it is questionable how far this can really be done for material much of which was the accoutrement of a mobile nobility, with their own craftsman moreover in their retinues. Sir Cyril suggests a persisting atelier tradition in the Upper Thames area (pp. 144–5), but there would seem little justification for the idea that the Thames and Witham shields were made there. Also, he relegates to the North the making of one of its major early pieces, e.g. the Standlake sword³ (p. 24). This hypothesis of Upper Thames workshops should not be allowed to pass uncritically into the received body of British prehistory. The discussion of the Yorkshire material and its meaning (pp. 5–9) is a notable advance on any previous treatment, though the term 'Marnian' might need some reviewing.

During the next phase, the first century B.C., the tradition weakens, and the material is treated under 'schools' geographically arranged. There follows a treatment of Celtic and Belgic art in the period 20 B.C.–A.D. 80, with the objects for display classified according to their purpose, after an invigorating ten pages on Man and Animals (though here he might perhaps have said more about hinted faces peering out from abstract patterns). The photographs of the Marlborough 'Vat' (surely Gaulish) are most welcome. The study of mirrors he has made particularly his own.

The whole survey, packed with interesting detail, is then rounded off with five pages of 'Reflections', and a grammar of Celtic ornament in the British Isles.

One point of contention on p. 5, concerning general principles, can fortunately be resolved in concord, for Jacobsthal did not himself attach numbers to his continental styles, and in recent years strongly disfavoured speaking of any British work as 'Style IV'.⁴

A few minor points may be noted. The Youlton bowl (p. 79) is not spun, but hammered and then lathe-cleaned by abrasion, as are most other bowls of this class, such as Birdlip or Stanwick. The scabbard, pl. 73b, is from the River Bann at Toome,⁵ Co. Antrim, and there is a mirror-handle from 'Ballymoney',⁶ Co. Antrim, which might be seen in the light of remarks on p. 94. The 'incomprehensible irregularities' of pattern 40 (p. xxviii) are surely not so when the decisive cross-bar is seen as a mark of the sword-scabbard engraver's style, the bar being a relict hiatus carrying a binding strip.

Three plates, 17, 39a, and 60b, are particularly fine views, the latter showing beautifully the rocked-graver technique on the Old Warden mirror. There are a number of new and useful

¹ The openwork discs from the Thames at Hammersmith might have been noted: *Brit. Mus. E.I.A. Guide* (1925), p. 147.

² Jacobsthal (*Early Celtic Art* (1944), p. 211, a note usually overlooked) was on reflection inclined to consider the Cerrig y Drudion bowl (of which Sir Cyril emphasizes the true importance, p. xxv), had been made in Britain by an immigrant Gaulish craftsman. Cf. also O. H. Frey, in *Au Musée de Besançon*, 1 (1955), 14–30.

³ This sword has a chape not of bronze (p. 14), but of finely wrought iron (J. J. Case, in *Rep. Oxon. Archaeol. Soc.* lxxvii, 1949, 7–8), which seems a continental feature.

⁴ This seems to have first appeared in J. M. Navarro's valuable section on chronology in R. E. M. Wheeler, *Maiden Castle* (1943), pp. 388–94, and has since been perpetuated.

⁵ *Ulster J. Archaeol.* xvii (1954), 81 ff.

⁶ *Ibid.* 93–94; cf. *ibid.* xx (1957), 73 ff.

illustration—the Trent scabbard photographs (pl. 21), the Aldborough horned head (pl. 43a), and the Mount Batten objects (pl. 31). Other illustrations are not all quite as good or well printed as they should be to do justice to the objects. Though deprecating the curling binding on their publications of this format, we must express gratitude to the National Museum of Wales for the encouragement it gives to the execution and publication of such major work covering the whole of Britain.

The soundness of Sir Cyril's main theses stands out—the beginnings of Celtic art in Britain in the third century B.C., his selection of the early group, the sequence of shields, the weakening of the tradition in the first century B.C. Perhaps he is a little drastic concerning art in Britain of the Roman Iron Age. Workers in very many fields will be grateful to Sir Cyril Fox for carrying through this extensive survey, and presenting it in so pleasurable a book.

E. M. JOPE

Suffolk Farming in the Nineteenth Century. By JOAN THIRSK and JEAN IMRAY. 9½ × 6. Pp. 178. Suffolk Records Society. Vol. 1, 1958.

The newly-founded Suffolk Records Society begins its career of publication with an unusual period—a volume of documents illustrating the history of farming in that county during the nineteenth century. Moreover, the volume is a memorial to Vincent Redstone (1853–1941), a distinguished antiquary, and to his daughter Lilian (1885–1955), who between them did so much for Suffolk history and for all local historians coming after them. Mr. Norman Scarfe, one of the general editors of the Society, opens the volume with a sympathetic memoir of father and daughter.

Dr. Joan Thirsk introduces her selection of records (in which she was assisted by Jean Imray of the East Suffolk Record Office) with an able survey of Suffolk farming in the nineteenth century, during which it underwent a revolution. Her selection of documents is 'designed to illustrate both the national and the local history of agriculture and rural society'. We already know a good deal about the agricultural revolution of the eighteenth century, for this has long been a textbook matter. We know much less about the nineteenth century, and here the volume is most rewarding and instructive.

The choice of the nineteenth century for this first volume of a new Records Society may strike some antiquaries as capricious or even painfully provocative. But that century is now far enough away from us to be a respectable field of study, and only those who have tried to write a local history of the period (or to identify its by-gones) know how exasperating and baffling it can often be. It has become another world altogether. Some of the simplest facts about it, as one knows from personal experience, are now most difficult to unearth, partly because of the very welter of material. To this extent, Dr. Thirsk and Miss Imray have performed for local historians a greater service than might be thought from their prosaic title. In a limited space like this one can best indicate the range of their material by their main headings: Routine Husbandry, Agricultural Improvement, Agricultural Depression, Landlords and Tenants, Agricultural Labourers, Marketing, and Suffolk Farmers at Home and Abroad.

Suffolk Farming in the Nineteenth Century is nicely produced, with useful end-paper maps: and, one observes with pleasure, is printed appropriately 'At the Butter Market, Ipswich'. It is welcome news that yet another county has founded a Records Society (there are still too many benighted counties that have none and are making no effort); and it is gratifying to observe its excellent start in this volume.

W. G. HOSKINS

Grain-mills and flour in classical antiquity. By L. A. MORITZ. 8½ × 5½. Pp. xv + 230. Oxford: at the Clarendon Press, 1958. 50s.

When asked whether I would give a short review of Mr. Moritz's book, I had considerable

misgivings, as the specialized subject of flour-milling was one of which I was very ignorant. But I am glad now that I agreed to do so, for I found the book readable and the subject presented in an interesting way; and the many references given in the text are invaluable for further study.

In Part I the author deals generally with grain-mills and throws much light on their origin and development throughout classical times. Broadly speaking there are two types of mill, reciprocating and rotary. Of the former, the earliest appears to be the saddle-quern, inherited from Egypt or some other source, in which the grain was crushed between two stones, and the upper or saddle stone being moved backwards and forwards upon the lower, thus grinding the grain in the process. A development of this was the mill with the hopper rubber, in which the upper stone was hollowed out in the form of a hopper with an orifice, usually a slot, at its base. The grain was thus fed gradually into the mill, and ground as the hopper was moved backwards and forwards. The 'Olynthian' mill was similar, but of a rather more advanced form requiring less manual effort to work it. It incorporated a bar located in a groove running across the top of the hopper and by pivoting it at one end to a peg mounted on the rigid base on which the mill stood the hopper could be moved on the arc of a circle centred on the pivot, by moving the other end of the lever to and fro.

In the rotary types of mill, one millstone rotated above the other round a common axle. Whether the animal, or 'Pompeian', mill or the hand-quern was the earlier has not been established. The former was, of course, larger and stationary and the latter smaller and portable, so both were equally necessary. The hand-querns were fitted with a handle mounted on the side of the upper stone enabling it to be rotated. The animal mill is thought to date from the second century B.C. and to be an invention of Roman Italy. By the end of the Roman era the water-driven mill was becoming common, thus replacing animal power. At first the operation of the mill was by a simple direct drive, but later by the use of a reduction gear, and, as the author points out, by this time 'the grain-mill had reached a degree of perfection which allowed it to remain essentially unchanged for well over a thousand years'.

Part II of the book is devoted to the subject of flour. It records man's efforts to improve his diet by making his food more palatable and easier to digest. The choice and cultivation of suitable cereals was of fundamental importance to him, and the efficient reduction of grain to flour called for much ingenuity.

The book is most informative, exceedingly well produced, and excellently illustrated.

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- KUML, 1957:—Megalithic tombs at Tustrup, by P. Kjærøum; Stone-age houses on Knardrup Gallowa Hill, by K. A. Larsen; A scabbard from the Early Bronze Age, by B. Sylvest; Ein vorrömisches Grab von Try, Amt Hjørring, von C. J. Becker; Jordanes' Bericht von der Auswanderung der Goten, von A. Stender-Petersen; Træl—Tralle—Trælleborg, von N. Lunn; Stave-yard and ached enclosure, by T. Ramskou; The hundred-meter section, by T. G. Bibby; A cuneiform inscription from the island of Bahrain, by J. Læssøe; Prehistoric discoveries in Qatar, by P. V. Glob.
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GALLIA, tome 16, fasc. 1:—Nouvelles épaves de Provence, par F. Benoît; Les graffites gallo-romains de Peyrestortes (Pyrénées-Orientales), par G. Claustres; Le nain bossu au coq, de Strasbourg, et les Lagynophories alexandrines, par C. Picard; Fouilles de Glanum, 1947-1956 (Saint-Rémy-de-Provence), par H. Rolland; Puits funéraires d'Aquitaine: Vieille-Toulouse, Montmaurin, par G. Fouet; Recherches archéologiques dans la région d'Apt (Vaucluse), par A. Dumoulin.

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ALT-THÜRINGEN, Band 3, 1957-8:—Die jungpleistozänen Säugetierfaunen aus dem Travertingebiet von Taubach-Weimar-Ehringsdorf (Vorbericht), von H.-D. Kahlke; Die Bedeutung der fossilen Sumpfschildkrötenreste für die Diluvialklimatologie des Travertins von Weimar und Ehringsdorf, von H. Ullrich; Zur Bezeichnung paläolithischer Artefakttypen, von J. Müller-Beck.

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AUSGRABUNGEN UND FUNDE, Band 3, Heft 1, 1958:—Bodendenkmalschutz im Norden des Bezirkes Leipzig, von H. Kaufmann; Die Sammlung Wallrabe, Birnienitz, von E. Meyer; Zwei kreuzschneidige Axthacken aus dem Vogtland?, von H. Kaufmann; Beobachtungen an der Patina einiger Hortfunde aus der frühen Bronzezeit Sachsens, von G. Billig; Abfallgrube mit Muschelresten und Knochenwerkzeugen aus Zauschwitz, Kr. Borna, von W. Coblentz; Untersuchungen im Ortskern von Taucha, Kr. Leipzig, von B. Schmidt; Die Grabungen auf dem Zehrener Burgberg, 1957, von W. Coblentz; Kleinfunde des hohen Mittelalters im Leipziger Land, von R. Moschkau.

Heft 2:—Contains short articles dealing with sites in Mecklenberg.

Heft 3:—Contains short articles on Brandenburg.

Heft 4/5:—Articles on specific sites and general articles designed as a background for the Hamburg Conference covering the D.D.R.

BAYERISCHE VORGESCHICHTS-BLÄTTER, Heft 22, 1957:—Bronzezeitliche Bernsteinschieber, von R. Hachmann; Skelettgräber der frühen Kaiserzeit in Rhätien, von P. Reinecke; Ein römisches Gräberfeld in Neuburg an der Donau, von W. Hübener; Zur Geschichte von Bratananium, von P. Reinecke; Fundbericht für die Jahre 1954-1956.

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